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## ORIGINAL DEPARTMENT.

### LECTURE.

#### EXTRAVASATION OF URINE.

BY FESSENDEN NOTT OTIS, M.D.,

Clinical Professor of Diseases of the Genito-urinary System, in the College of Physicians and Surgeons, New York.

GENTLEMEN:—On account of failure of the usual conveyance, it was impossible for many of you to attend my last clinic at Blackwell's Island. One of the cases presented on that day was of unusual importance, so much so that it appears to me worthy of occupying a share of your attention to-day, especially as we shall probably have an opportunity of watching its subsequent development. I will, therefore, give you its history up to the present time.

On Tuesday last I went to the Island to make my ordinary rounds, and inquired if there were any new cases of importance to be looked after. Was informed there was a patient, a man, who had a slight swelling in the perineum, and had had retention of the urine, which the house surgeon had easily relieved; the swelling was being poulticed. From having had some interesting experience with slight perineal swellings, I was interested to see the case. Examination showed, not only a perineal swelling, but some œdema of the scrotum. The scrotal swelling, which had come on within an hour or two, was translucent, rosy in color. The patient complained of great difficulty in passing his water. When I asked him to urinate the urine came away in drops. On further inquiry I found that he had been the subject of gonorrhœa several times, but he had never had a stricture, nor any recent gonorrhœal trouble, nor any difficulty with urination until within

a few days. He had some fever, which was attributed to the perineal inflammation. When I saw him the temperature was 102.5° Fahrenheit, and the pulse was about 115 or 120. The patient was informed that it was necessary to open an abscess which I believed was present in the perineum, although there was very little fluctuation or other positive evidence. He declined, however, to have anything done, believing that he was doing very well; he insisted that he was passing his water better than he had done, and he did not see any reason why he should be operated on, and he did not propose to be operated on. I urged him, by all the considerations which I could bring to bear, to allow me to operate on him, assuring him that a very grave accident had occurred; that there had been an abscess of the penis, which had opened into the urethra; that through this opening urine had found its way into the tissues of the scrotum; that this innocent looking œdema of the scrotum was nothing more nor less than the result of urinary infiltration which threatened destruction of important parts within a very few hours, and that the extravasation was likely to extend to the tissues of the abdomen. I presented to him, in as strong a light as possible, the dangers attending delay, but could not prevail upon him to allow me to operate. His only reply was, that he would not be operated upon to-day. Having no other alternative, I passed a soft rubber catheter into the bladder and left it, with instructions that when, through the advance of the infiltration, the patient should be brought to consent, an operation would be performed; for, of course, as long as he was in his right mind, we could not compel him to submit to an operation, and besides there

was a possibility that an opening might occur through the external parts, by suppuration, and so afford relief.

The next morning the house surgeon came to my office with word that the size of the scrotal tumor had increased considerably; that the tissues were becoming of quite a dark red, and that swelling had taken place above the pubes. He also stated that slight redness covered an area of five or six inches square in the integument of the right groin. After arriving at the hospital, I found the scrotum fully six inches in its long diameter and nearly five in the transverse—pitting easily on pressure. The perineal swelling was somewhat more prominent, very firm, and very slight if any sense of fluctuation imparted to the touch. The patient was etherized and a grooved staff, No. 15, was passed easily into the bladder. This was held firmly in the median line, by my friend, Dr. Sturgis, who kindly assisted in the operation. Then passing my finger into the rectum, in order to avoid wounding the gut, I made my perineal incision two and a half inches in length, and deeply, until the sound was reached. Almost at the first stroke of the knife there was a gush of fetid pus, at least two ounces.

I introduced a broad director alongside the sound and on into the bladder, and then, removing this instrument, passed a large catheter along the director into the bladder and removed the director. A large soft catheter was then introduced into the bladder through the perineal opening, in order to keep the viscus well drained. In passing, allow me to remark that this is the plan I always follow in perineal sections, thus keeping the tissues free from danger of subsequent infiltration of urine. I made five incisions into the swollen scrotum, from two to four inches in length, extending through the superficial fascia and cellular tissue, down to the tunica-vaginalis, and by a little compression with my hands the urine and serum poured out freely, and the tissues were emptied, to a very considerable extent, of this irritating material. Oakum smeared with vaseline was then put into the cuts, a bandage applied, and the patient was carried to his bed. To-day, the day after the operation, I am informed that the patient is quite comfortable; the temperature has gone down two degrees, the color in the groin is fainter, the swelling has not increased.

This trouble might have gone on further, and, as usually occurs in cases of extravasation, we should have infiltration of urine in the groin and integument over the abdomen, requiring further

incisions to be made. From the report of the case to-day, however, I trust this will not be necessary.

A few words now with regard to the manner in which this accident occurs. The urethra is studded with little follicles or racemose glands, some of which are at the bottom of a little canal, or canaliculus, and from these the lubricating fluid of the urethra is in great measure derived. There is notably one found in almost all urethrae, on the superior surface of the canal, about half an inch from the meatus externus, the lacuna magna, which is often large enough to admit the end of a small-sized probe. These little secreting glands at the bottom of depressions, which are more numerous in some urethrae than in others, sometimes become inflamed independently of inflammation of the surrounding tissue. That is to say, there sometimes occurs trouble localized in a single one of these depressions, and when this is the case, it is usually the result of a stricture of large calibre; a stricture which is just sufficient to form a slight obstruction, behind which pus or other material may lodge and keep the parts in an abnormal condition, ready to take on inflammation. Such is the explanation of an accident like that which occurred in our patient, as given by authorities who have paid particular attention to this subject. Inflammation having been thus excited in one of these follicles, suppuration takes place, pus burrows along, sometimes a distance of half an inch or an inch; sometimes it makes its escape externally in the shortest direction. In any case we have a passage formed through the urethra into the tissues, and into this urine readily finds its way, sometimes, however, in so small quantity that it simply gets up a little accumulation of plastic material, which finally forms a small nodule and stops the further progress of the trouble. Again, the opening may be larger, and urine may find its way into it in greater quantity, and cause active inflammation in the tissues, forming an abscess, through which extensive infiltration may take place.

This subject is one of such great importance that I will be obliged to complete my remarks on a future occasion, the first part of this hour having been occupied by the presentation of other cases. Owing to the fact that writers have said a very great distinction should be made between the little bunches which result from slight departures from the urethra and an abscess the result of urinary extravasation, the subject of perineal swellings has come to be very greatly misunderstood. I insist upon it that no difference exists in the

nature of the two cases, and whenever a swelling of the perineum occurs independent of an immediate injury, or a furuncular trouble, we may be sure that in ninety-nine cases out of a hundred it is the result of follicular penetration of the urethral canal, from the causes previously stated, and that it will go on to the formation of an abscess of greater or less size; and we cannot tell in any case, whether what appears to be a small affair is going to remain so, or whether it is going on to the destruction of a large amount of tissue. Some of the most innocent appearing cases have gone on rapidly, within a few hours, to result in infiltration of urine and speedy death of the patient.

(To be Continued.)

## COMMUNICATIONS.

### ON THE THERAPEUTIC USE OF JABORANDI AND PILOCARPINE IN EYE DISEASES.

BY M. LANDESBURG, M.D.,  
Of Philadelphia.

The results of my first trials with jaborandi and pilocarpine, published in numbers 298 and 299, vol. IX, of the *Philadelphia Medical Times*, and in vol. VIII, 1, of Knapp's *Archives of Ophthalmology*, have justified me in endorsing the important therapeutic value of this new remedy, and in claiming for it a superiority over all hitherto known absorbent remedies in instances of serous effusions, intraocular hemorrhages and opacities of vitreous. The diversity of opinion which still exists among the general as well as the special profession in regard to the therapeutic value of the drug; the objections which are often raised against its use, on account of the unpleasant after effects which so frequently follow its administration, prompt me to give a further account of my experiences gained from the continued use of jaborandi and pilocarpine, in the various forms of eye diseases. But in order to show the intrinsic properties of this remedy in all purity, I shall give notes only of such cases in which I employed either jaborandi or pilocarpine, without the simultaneous use of any other medicine.

(A) *Extract of Jaborandi* has been used in the following eye affections:—

1. *Parenchymatous keratitis*. There was no effect whatever in any of the ten cases (eight children and two men) in which the remedy was administered for two succeeding weeks. The morbid process ran its course as if no treatment had taken place at all.

2. *Panophthalmitis*, following discision of cataract in one case, and linear extraction of cataract in another. The treatment resulted in relieving the severe pain and in abating somewhat the symptoms of inflammation. But it had not the slightest effect upon the course of the morbid process.

3. *Hemorrhages into the anterior chamber and vitreous*, consequent upon a blow on the eye, in seven cases. Vision was reduced to perception of light only. In three patients, ten doses of jaborandi, in four patients, fifteen doses, taken within two weeks, brought about perfect recovery.

4. *Irido-choroiditis, with opacities of vitreous*, in three women between the ages of eighteen and twenty-six years. In the first two cases, sixteen doses of jaborandi, taken within three weeks, restored the normal condition of the vitreous and brought vision from  $\frac{2}{8}$ , resp.  $\frac{1}{8}$ , to  $\frac{3}{8}$ , resp.  $\frac{4}{8}$ . In the third case, in which mercurial treatment and iridectomy did not check the morbid process, seventeen doses of jaborandi, taken within four weeks, resulted in a perfect cure. Vision increased from  $\frac{2}{8}$  to  $\frac{4}{8}$ . Only two small flocks were left in the vitreous.

5. *Irido-choroiditis serosa, with opacities of vitreous*, in two cases. In the case of a shoemaker, fifty years old, ten doses of jaborandi, taken within three weeks, brought vision from  $\frac{2}{8}$  to  $\frac{3}{8}$ , and made vitreous perfectly transparent. In the other case, of a woman of forty-eight years, in whom vision was reduced to counting fingers at 3', fifteen doses of jaborandi, taken within three weeks, brought about perfect recovery. Vision increased to  $\frac{3}{8}$ , and opacities of vitreous vanished entirely.

6. *Equatorial choroiditis with circumscribed choroidal atrophies, diffuse infiltration of the retina, and opacities of vitreous*. The vitreous humor had the form of a bunch, composed of numerous large, thick tufts, which spread, fan-like, into the space of the vitreous, veiling almost totally the background of the eye. Vision was reduced to counting fingers at 5'. Patient, workman's wife, twenty-eight years, had remarked for eighteen months the gradual decrease of vision in her left eye.

After the fifth dose of jaborandi V. was  $\frac{3}{8}$ . Opacities of vitreous were considerably thinner and more transparent. Some fascicles of the bunch had totally vanished; others had become very thin; and still others had dissolved into small, roundish, star like bodies, which moved in the vitreous like a shower of shooting stars.

After the tenth dose of jaborandi V. was  $\frac{4}{8}$ , and Jaeger 1. Vitreous contained only some

very fine opacities and one large membranous flock.

After the fourteenth dose of *jaborandi*, V  $\frac{3}{8}$ . Only few fine opacities of vitreous are to be seen.

7. *Neuro-retinitis*, in two cases:—

In the first case, of a servant girl, 36 years old, the affection developed consequent upon the suppression of the menstrual flow, which had been caused by taking a cold. Vision of either eye was reduced to  $\frac{3}{8}$ . Fifteen doses of *jaborandi*, taken within three weeks, brought about perfect recovery.

In the second case, of a woman of 45 years, whose monthlies had stopped five years previously, the affection, gradually progressing, had reduced vision to  $\frac{3}{8}$  in the right eye, and  $\frac{3}{8}$  in the left one. Eighteen doses of *jaborandi*, taken within four weeks, improved the vision of the left eye to  $\frac{3}{8}$ , but had no effect whatever upon the condition of the right eye. The final issue of the latter was atrophy of the optic disc.

8. *Genuine atrophy of the optic disc*, in three cases:—

The first case was of a factory girl, 22 years old, whose eye affection developed in the course of erysipelas of the face and head. The right eye showed complete amaurosis. The left eye had V  $\frac{3}{8}$ . Eighteen doses of *jaborandi*, taken within twenty-five days, restored vision of the left eye to  $\frac{3}{8}$ . There was no effect upon the right eye.

In the second case, of a shoemaker, 40 years old, without obvious cause, eighteen doses of *jaborandi*, taken within four weeks, had the result to bring vision from  $\frac{3}{8}$  resp.  $\frac{2}{8}$  to  $\frac{3}{8}$  resp.  $\frac{3}{8}$ .

In the third case, of a merchant, 51 years old, the affection had set in in consequence of an injury of the head, received in falling from the steps. Nineteen doses of *jaborandi*, taken within thirty days, had the effect of improving the sight of the right eye from counting fingers at 3' to counting fingers at 6', and the sight of the left eye from  $\frac{3}{8}$  to  $\frac{3}{8}$ .

9. *Retinitis e morbo Brightii*, in the case of a saloon keeper, 47 years old. Seventeen doses of *jaborandi*, taken within thirty-one days, brought vision of the right eye from  $\frac{3}{8}$  to  $\frac{3}{8}$ , and of the left eye from  $\frac{3}{8}$  to  $\frac{3}{8}$ . The optic discs became less choked. Most of the hemorrhages were resolved. General constitution improved.

10. *Detachment of the retina*, in four cases:—

Of the three cases of detachment of the retina in consequence of progressive myopia, the treatment with *jaborandi* had no effect whatever in two instances, and a moderate result only in one

case. In the fourth case of detachment of retina, which had been caused by hemorrhage between choroidea and retina, consequent upon a blow upon the eyeball, complete recovery was obtained by nine doses of *jaborandi*, taken within two weeks.

(B) *Muriate of pilocarpine* has been used in the following affections:—

1. *Paralysis of the extern muscle of the right eye*, consequent upon exposure to cold, in two cases. There was complete recovery after five resp. eight subcutaneous injections of pilocarpine.

2. *Hemorrhage into the vitreous*, occurring spontaneously seven months after a successful linear extraction of cataract. When I saw the patient, five days after the occurrence, he counted with this eye fingers at 5' distance. The background of the eye could not be seen. Seven injections of pilocarpine, administered in the course of two weeks, brought about complete resorption of the hemorrhage, and restored vision to  $\frac{3}{8}$ .

3. *Central retinitis, with large, floating opacities of vitreous*, caused by a blow upon the right eye. Twenty-four hours after the accident, examination showed V.  $\frac{1}{8}$  with concave  $\frac{1}{2}$ , Jaeger 3. Anterior chamber shallow; tension somewhat diminished. One application of Heurteloup gave no improvement. After seven subcutaneous injections of pilocarpine, there was V.  $\frac{1}{8}$  with concave  $\frac{1}{2}$ , Jaeger 2. There is only one large flock in the vitreous left. All other opacities have vanished. After thirteen injections, V.  $\frac{1}{8}$  with concave  $\frac{1}{2}$  (the degree of myopia as had been before the injury), Jaeger 1. Anterior chamber and tension normal; serous infiltration and swelling of retina near macula lutea entirely vanished; vitreous perfectly clear. After a minute research one small, oblong opacity of vitreous, which has the shape of a spermatozoon, is discovered.

4. *Large, dense opacities of vitreous* in a lady, whose right eye had been struck by the elbow of her child. Eleven subcutaneous injections of pilocarpine effected total resorption of the opacities and restored vision from  $\frac{1}{8}$  to  $\frac{1}{8}$ .

5. *Chorio-retinitis, with opacities of vitreous*, in consequence of progressive myopia, in a lady of fifty-two years of age. There was:—

*Right Eye.* M.  $\frac{1}{2}$  S.  $\frac{1}{2}$ . Numerous large flocks in vitreous. Intense sclerolasia posterior. Large choroidal atrophies. (Edema of the retina and large, milky patches along the vessels.

*Left Eye.* Central vision totally abolished. Counts fingers at 2' distance, peripherically outside. Atrophy of the retina, over which are scattered patches of pigment, extravasations and

exudations, which hide the vessels. The region of the macula lutea is of milky appearance. Vitreous contains filiform opacities. Fifteen subcutaneous injections of pilocarpine had the following effect:—

*Right Eye.* M.  $\frac{1}{2}$ —V.  $\frac{1}{10}$ . Only two small flocks in vitreous left. Oedema of the retina and milky exudations vanished.

*Left Eye.* Vision slightly peripheric. Counts fingers at 12'. Reads Jaeger 13. Extravasations and exudations vanished. Macula lutea is covered by a patch of pigment. Vitreous is clear.

6. *Detachment of retina.* In three cases of detachment of retina of long standing pilocarpine was of no avail.

In one case of recent detachment of retina, in a patient of 51 years of age, whose healthy eye showed myopia  $\frac{1}{2}$ , the treatment with subcutaneous injections of pilocarpine yielded a very favorable result, also the latter did not remain stationary. The retina reattached almost entirely, and central vision increased from  $\frac{1}{100}$  to  $\frac{1}{8}$ . The relapse, after about four months, was again successfully combated by the same treatment. But when the detachment of retina set in for the third time, after an interval of nearly five months, patient acquiesced in his fate.

In another instance of recent detachment of the retina in both eyes, the improvement in the morbid condition of either eye was very remarkable after seven injections of pilocarpine. But patient withdrew from further treatment.

7. *Hemorrhagic retinitis* in the left eye of a boy of eight years of age. Vision was  $\frac{1}{10}$ ; Jaeger 5; fixation somewhat peripheric; central scotoma; field of vision normal; retina occupied by numerous extravasations of blood, of the size of a pin's head. Large hemorrhagic patch between optic disc and macula lutea. Vitreous clear. The appearance of a dark spot before the eye, about three days ago, had first attracted the attention of the boy to the present trouble.

There is no assignable cause of the affection; general health is good; respiratory and circulatory organs are normal. There is no symptom whatever of hemorrhagic diathesis.

Eleven subcutaneous injections of pilocarpine, made within three weeks, effected a total resorption of the small hemorrhages. The large extravasation broke into numerous small dots. Vision became  $\frac{1}{8}$ , and fixation central.

8. *Retinitis pigmentosa* in the following case: B., printer's son, nine years old, was brought to me on account of impairment of vision and of hearing, which had gradually developed in the course of the last two years; general health has always

been good and mental capacities have been normal.

The external appearance of the eyes and ears are normal; V. R.  $\frac{3}{8}$ ; Jaeg. 7; V. L.  $\frac{1}{8}$ ; Jaeg. 7; field of vision shows concentric limitation in the peripheric parts. This limitation is about twice as large in a dark room lighted by gas, than at daylight. On asking the patient, I find that the boy has great difficulty to move in the dark of the evening.

The ophthalmoscope reveals: Optic discs somewhat flat, slightly grayish; papillary region distinct; arteries contracted; veins normal. In the peripheric parts of the retina there is a continuous network of fine, star-shaped patches of pigment, deposited along the vessels; maculae luteae are distinct.

With the right ear patient hears whispering at 8', with the left at 6' distance; medium loud voice is heard at 12'. The membranæ tympani are somewhat opaque. Passage for ear-douche is good. No noises.

There is no consanguinity between the parents, and no hereditary tendency in the respective families. Syphilitic taint is denied by both parents. The boy is the only child born after ten years of married life.

Ten subcutaneous injections of pilocarpine, made within twenty-five days, had the following effect:—

V. R.  $\frac{3}{8}$ , Jaeger 2. V. L.  $\frac{1}{8}$ , Jaeger 4. Field of vision free by daylight; by gaslight somewhat limited in its peripheric parts. Optic discs are of somewhat reddish hue. The pigmentary deposits are flatter, fainter in hue, and transparent. Hemeralopia is considerably improved. The condition of the ears is unchanged.

9. *Double optic neuritis*, in the following case:—Miss G., twenty-five years old, had noticed a considerable decrease in the vision of the right eye, the day after the right side of the face had been exposed to a strong, cold draught. The sight failed, consequently, so rapidly, that when I saw patient, on the third day after the occurrence, the condition was as follows:—

*Right Eye.* Outside appearance normal. The movements of the eyeball outside and upward, the gently pushing of the latter into the orbital cavity, are painful; the pain had been more intense in the first two days. The region around the foramen supra-orbitale is very sensitive to the touch. Vision is reduced to counting fingers at 10' to 12' distance. The fixation is somewhat peripheric. Field of vision is slightly narrowed in the upper periphery. Reaction of pupil is sluggish. Tension is normal. Refracting media

are clear. Optic disc is of reddish-gray color, prominent, opaque and swollen. Its vessels are hidden by the serous infiltration, which extends over the peripapillary region. Small hemorrhagic patches are scattered over the optic disc, and one large oblong extravasation of blood covers the peripapillary part of the inferior branch of the ophthalmic vein. The inner border of the optic disc is occupied by a slightly prominent grayish plaque. The arteries are contracted, the veins are engorged, dark-red and tortuous.

*Left Eye normal.* General health has always been good. Percussion of the head is not painful. Mental capacities are unimpaired. No headaches and no syphilitic taint. Circulatory and respiratory organs are normal.

After five subcutaneous injections of pilocarpine there was V.  $\frac{1}{10}$ , Jaeger 9. Fixation somewhat peripheric. Perception of colors normal. The movements of the eyeball, the pushing of the latter into the orbital cavity, are painless. Pressure on the exit of the supra-orbital nerve causes only a slightly uneasy sensation. The swelling of the optic disc is somewhat diminished. The small hemorrhagic patches have vanished.

After ten injections of pilocarpine there was V.  $\frac{1}{8}$ , Jaeger 5. Fixation slightly peripheric. Field of vision normal. All traces of pain vanished. The œdema of the optic disc considerably diminished. The large hemorrhagic patch partly resorbed. The grayish plaque flattened.

No further improvement after the fifteenth dose. Heurteloups and iodide of potassium, to which I resorted, were of no avail.

During a further observation of about three months, the optic disc remained slightly swelled, dusky, and of bluish-gray color. The vessels were veiled by a delicate, diffuse opacity; the peripapillary region was indistinct. The arteries were thin, the veins somewhat engorged and tortuous. Vision decreased to  $\frac{1}{10}$ , Jaeger 8.

10. *Genuine atrophy of the optic disc, with central scotoma, in two cases:—*

In the first case, of a merchant, forty-eight years of age, fifteen subcutaneous injections of pilocarpine, made within twenty-three days, brought vision from  $\frac{1}{10}$  to  $\frac{1}{8}$  in either eye.

In the second case, of a merchant, fifty years of age, nineteen subcutaneous injections of pilocarpine, made within a month, brought vision from  $\frac{1}{10}$  to  $\frac{1}{8}$  in the right eye, and from  $\frac{1}{10}$  to  $\frac{1}{8}$  in the left eye.

11. *Amaurosis of both eyes, caused by a uræmic attack in the course of scarlatina, in the case*

of a girl of eleven years of age. Nephritis developed on the twentieth day of the affection, in consequence of exposure to cold. After a uræmic attack, total blindness set in in both eyes. Perception of light reappeared after twelve hours, and the sight improved spontaneously in the following two days, so far that the patient was able to distinguish the features of her parents. When I saw the girl, on the eighth day after the occurrence, she counted fingers with either eye at 2' distance. Quantitative perception of light was good in all directions of the visual field. Pupils were somewhat dilated, but of normal shape and reaction. Refracting media and tension were normal.

*Ophthalmoscopic examination was negative.* There was some hydrops around the ankles. Urine contained albumen.

After the second injection of pilocarpine vision increased to  $\frac{3}{8}$ , and became  $\frac{1}{2}$  in either eye after the ninth injection. Hydrops and albumen disappeared.

12. *Chronic Scleritis and irido-choroiditis, and opacities of vitreous in the left eye, in the case of a waiter of twenty-seven years of age.* The affection had lasted for about three years. The different kinds of treatment to which the patient had been subjected had afforded but little relief. Eighteen subcutaneous injections of pilocarpine, administered within five weeks, resulted in clearing up the vitreous, in improving the vision from  $\frac{1}{10}$  to  $\frac{1}{8}$ , and in bringing the morbid process to a stand-still.

*General Remarks.*—Either preparation was administered two or three hours after a light supper had been taken, the patient being in bed, covered with a blanket. Jaborandi was given in warm tea, in doses which varied from fifty drops to four teaspoonfuls. Of forty-three adults whom I treated with jaborandi, the desired effect was produced with fifty drops in five; with one teaspoonful and a half in ten; with two teaspoonfuls in twenty; with three teaspoonfuls in five; and with four teaspoonfuls in three patients. The effect took place in about fifteen to thirty minutes after the ingestion of the drug, beginning with salivary secretion; perspiration followed within ten to thirty minutes afterward. In no instance a reverse condition was observed, and in no case the absence of either effect noted. Salivation lasted for about one hour and a half to two and three hours; perspiration subsided earlier. There was no ill effect whatever in ten patients; in seven patients the unpleasant after symptoms were very considerable; in the others they were but slight.

My experience in the use of jaborandi, gained in adults, totally failed when I began to try the remedy in children. The first child which I treated with jaborandi was a girl of seven years, who suffered from parenchymatous keratitis of both eyes. The mother was ordered to give at first thirty drops, and eventually to raise the dose to sixty drops. But even the latter dose failed to produce any effect. On two teaspoonfuls the skin became somewhat moist. A full benefit was only obtained by injection of four teaspoonfuls of the drug. Perspiration was copious for about an hour. Salivation was almost absent. There were no unpleasant after symptoms whatever. In the other seven cases of parenchymatous keratitis, observed in children between seven and twelve years of age, I had also to recur to high doses of jaborandi in order to produce the desired effect. In four children between nine and twelve years the dose was four teaspoonfuls; in three children, between seven and nine years, five teaspoonfuls. Salivation was absent in three children, and but very slight in four. Perspiration was less copious than in adults, and of shorter duration. The ill after-effects were very slight. Vomiting occurred only once, in a child which had taken a large supper before the ingestion of jaborandi. Nausea occurred in two children. The only inconvenience generally felt was pain in the abdomen.

The effective dose for subcutaneous injections of pilocarpine, in adults, varied from  $\frac{1}{4}$  to  $\frac{3}{4}$  of a grain. Salivation generally set in within two to ten minutes; in several cases, however, instantaneously—before I had time to withdraw the needle. Perspiration followed after, about two to ten minutes. The duration of salivation was longer than perspiration; the latter kept on for an hour to two hours, the former continued for half an hour to an hour longer. The action of the drug began, in all instances, with increase in the pulse-rate and mostly with congestion to the head. The respiration was accelerated, and in several cases difficult. In a few instances there was dyspnoea. This stage was the most unpleasant one to the patients. But these phenomena vanished as soon as salivary secretion made its appearance, and general easiness took place with the occurrence of perspiration. In the course of the process there was a slight fall in the temperature of the body; the patients felt chilly and they required warmer covering.

Of twenty-seven adults in whom I used subcutaneous injections of pilocarpine, the after symptoms were very stormy in two. Vomiting and nausea occurred after every injection, and the

other inconveniences were very severe. In five patients there were no unpleasant after-effects at all. In the other patient the ill after-effects were but slight, and easily borne. Slight gastric catarrh was generally a consequence of the treatment, but it was entirely wanting in a few instances.

Inflammation of the subcutaneous tissue around the point of injection occurred only in one lady patient. The inflammation set in after every injection, but it was very slight, and subsided either spontaneously or on warm poultices.

In children, I had to administer from half a grain to one grain of pilocarpine, in order to gain a full effect. Perspiration was copious; salivation but moderate. The after symptoms either very slight or totally wanting. The children had not the slightest aversion to the treatment.

1912 Arch Street, Philadelphia.

## HOSPITAL REPORTS.

### HOSPITAL OF THE UNIVERSITY OF PENNSYLVANIA.

CLINIC BY JOHN ASHHURST, JR., M.D.,

Professor of Clinical Surgery in the University of Pennsylvania.

Reported by WM. H. MORRISON, M.D.

FRACTURE OF THE SHAFT OF THE FEMUR; FRACTURE OF BOTH BONES OF THE FOREARM; FRACTURE OF THE NECK OF THE FEMUR; TENOTOMY OF THE TENDO-ACHILLIS AND PLANTAR FASCIA.

GENTLEMEN:—I have the opportunity, at the beginning of the session, to show you several cases of fracture. These are cases that you will meet constantly in practice, and it is of extreme importance that you should be entirely familiar with their treatment, both for your own comfort and for that of your patients.

#### Fracture of the Shaft of the Femur.

This young man has sustained a fracture of the shaft of the thigh bone. He was walking along the top of a train of cars, and falling between two of them, he received a fracture about the middle, or a little below the middle, of the left femur.

This particular form of injury, fracture of the shaft, is, in adults, often the result of indirect violence. In children, the injury usually results from direct violence, as from a blow, or from a wagon wheel passing over the limb. This fracture often results from a fall upon the knee, or from a blow on the bent knee, in such a manner as to bring, as it were, the extremities of the bone together. A not unfrequent mode in which this injury is produced, is by a man sitting upon the platform of a car with his knee resting against the car in front. The cars suddenly come together, there is an approximation of the ends of the bone, and the thigh is broken. When it results from indirect violence, the line

of fracture is commonly oblique. In oblique fractures there is more marked shortening than in those which are transverse. In children, where the injury is the result of direct violence, the line of fracture is very apt to be transverse, and there is little shortening. I do not suppose that we shall find much shortening in this case, as extension has been applied for forty-eight hours. In measuring the thigh you should, in the first place, see that the pelvis is evenly elevated on both sides, and that the patient is lying squarely on his back. You can ascertain this by drawing a line from one anterior superior spinous process to the other, and then dropping a line perpendicular to this line, at its middle; the perpendicular line should, of course, come evenly between the limbs. We now have the patient squarely on his back, and if there is any difference in the length of the limbs we can ascertain it by measuring. The best points to use in measuring are the anterior superior spinous process and the corresponding internal malleolus. There is one source of fallacy: that is, one limb may naturally be shorter than the other. In a large number of persons one leg is shorter than the other. Now if a person whose right leg was naturally three-fourths of an inch or an inch shorter than the left sustained a fracture of the right leg, you can easily see that you could not derive much information from measurement. In this case the right leg measures almost thirty-four inches, while the left is not quite thirty-three inches. It is, of course, possible that the left leg was naturally an inch shorter than the right, but as we have the shortening on the side of fracture, the inference is that it is due to the fracture.

This is, perhaps, the most prominent symptom of fracture. Students are sometimes asked to give the most common symptom of fracture. The answer is "shortening." There are some exceptions to this rule; thus, in fracture of the patella, of the olecranon process of the ulna, and of the ensiform process of the sternum, you have lengthening, but with these exceptions, shortening is the rule, and is the most common symptom of fracture, and is particularly marked in fracture of the thigh.

Besides shortening, we have eversion of the foot. This patient has both feet about equally everted. If I ask him to invert the sound limb he does it very well, but when he attempts to invert the injured limb, he moves it very slightly, and if I try to invert it I give him pain. You must sometimes judge, not so much from the presence of eversion as from the absence of the power of inversion. Eversion of the foot occurs when there is fracture of any part of the thigh bone. It is particularly marked in fracture of the neck.

The explanation of this eversion is given differently by different authors. Some say that it is due to muscular action alone. Occasionally, in very rare cases, inversion of the foot is met with; these cases are explained by supposing that the muscles of the outer side of the limb are paralyzed. Mr. Erichsen gives this explanation.

It used to be said, without any very positive reason, that the eversion was due to the weight of the limb. This has been denied by those who

believe exclusively in muscular action; but as in many other matters, the true explanation lies between these two extremes. Mr. Owen, an English surgeon, has performed the experiment, on the cadaver, of making a longitudinal section of the leg from the seat of fracture downward, and he has found that the outer side of the limb is the heavier, and that the centre of gravity lies in the outer side. So that by a mechanical necessity the foot is turned outward. Shortening and eversion are the two most important symptoms of fracture of the thigh.

Besides these, we have a symptom common to almost all fractures (but not to impacted fracture), *i.e.*, crepitus. I shall not put the patient in pain by trying to produce crepitus. Dr. Hughes distinguished it very clearly when the man was admitted. Sometimes you will fail to produce crepitus, unless you make extension. This is due to the fact that the ends of the bone may have become imbedded in the muscles and no part of the fragments be in contact. Of course, in all unimpacted fractures you have increased mobility.

There is another symptom to which I want to call attention, and that is slight tenderness and effusion in the knee joint. You see on this side of the thigh a slight abrasion, and you might suppose that the effusion was the result of direct injury, but such is not the case. Effusion into the knee joint is a characteristic symptom of all fractures of the thigh at or below the middle, and it is also met with in many fractures of the tibia. The explanation is interesting. The true explanation has been given by a French surgeon, Mr. Gosselin. It has been supposed to be due to direct injury of the joint. It often comes on some time after the injury. It was present in this case when the man was admitted, twenty hours after the injury. The correct explanation is this: at the seat of fracture, beside the bone being broken, there is great laceration of the muscles and cellular tissue, and much blood is thrown out. The blood gradually leaks down until it reaches the capsule of the joint; it does not enter the joint. That effusion is simply serous, synovial effusion. The blood reaches the outside of the capsule, there produces irritation, and a true synovitis is set up, as a result of this irritation. It is a mild form of subacute synovitis set up by the blood irritating the outer side of the capsule. Whenever you have synovitis, from any cause, you will have effusion into the joint.

I might call attention here to the way of distinguishing effusion in the joint from effusion around the joint. When I press the patella downward, I find that it floats. When I tap it, it at once rebounds. On the other hand, if the patella rested steadily on the femur, and there was no floating nor rebounding, I should feel sure that the effusion was extra-articular.

Here, then, we have the characteristic symptoms of fracture of the shaft of the femur: shortening, eversion of the foot, crepitus, increased mobility and effusion into the knee joint.

The treatment of fracture of the shaft of the thigh bone depends upon a consideration of these characteristic symptoms. There is shortening; you therefore need some means of extension. The older surgeons relied upon their hands to

make this extension, and upon splints to maintain it; but in modern time the weight extension has been adopted. It is applied in this manner. We first make what is called a stirrup, by means of a piece of board wider than the foot and a long strip of plaster that will extend from above one side of the knee around the foot piece and to above the opposite side of the knee. A short piece of plaster is placed on the inside of the foot piece, extending to each malleolus, in order to protect them. The two long strips are then applied in this manner to each side of the leg. Some surgeons carry the extension above the knee, but my own preference is to limit it below the knee, principally on account of this effusion. This would be increased by any constriction above the knee. There is no necessity for carrying the extension above the knee. Three shorter strips are then put around the limb, one just below the knee, one about the middle of the leg, and the other just above the ankle. Then over these plasters an ordinary roller is carried by spiral reverses of the lower extremity. The ends of the long strips that project above the knee are now turned over and secured by further turns of the bandage. A cord passes through a hole in the foot piece and over a pulley at the foot of the bed; to this a weight is fastened, by means of which continuous extension can be kept up. This is a very old mode of treatment. It was used by an eminent French surgeon, Gui de Chauliac, several hundred years ago, but this use of extension was forgotten, although it continued to be used in the treatment of joint diseases. Brodie used it for this purpose. The late Dr. Gordon Buck revived its use in the treatment of fracture of the femur; and the method is now generally known as Buck's, or the American treatment.

The weight applied should not, as a rule, exceed twelve pounds. We have applied here one brick, which is estimated to weigh four or four and a half pounds. This afternoon we shall probably add another brick, and in the course of a week, a third. Some surgeons employ as much as twenty, thirty, or even forty pounds. I do not believe that there is any advantage in using such heavy weights; indeed, there may be harm in so doing. They might possibly, draw the ends of the bones asunder and so interfere with the union.

Besides extension, we need some support for the sides of the limb. Dr. Buck employed short splints around the limb. Others employed sand bags. I think that in fracture of the shaft of the femur you will obtain better results from the steady extension and the use of these old fashioned long splints. They are the same as were used by our predecessors without extension. These splints are from Physic's modification of Desault's apparatus. The outer splint should reach from the axilla to below the foot, and the inner from the groin to below the foot. They may be padded with cotton, a folded blanket, or, as we find convenient here, first wrapping the splints in a splint cloth, and then interposing between the splints and the limb, junk bags, *i. e.*, bags containing bran. In wrapping the splints in the splint cloth, you must be careful to allow for the difference in width of the two ends of the splint.

We now secure the splints to the limb by means of strips of bandage. Five are usually required; one at the ankle, one at the knee, one below the groin, one around the pelvis at the crest of the ilium, and one around the chest.

When the effusion into the knee joint goes down a little, and we can handle the joint without causing pain, we shall, at each dressing, if necessary, rotate the knee inward, in order to overcome the tendency to eversion. You see that by this dressing we fix the joints on both sides of the fracture. You may lay it down as a rule, that in all fractures of the long bones you must fix both the joint above and the one below the seat of fracture.

This dressing seems a little complicated when applied for the first time; but it is very simple, and requires but little attention after it has been adjusted, and it gives, I think, more satisfactory results than any other mode of treatment. The extension should be made in the line of the limb, and the leg should be in a state of slight abduction. When the patient has been removed to the ward, we shall make counter-extension, by elevating the foot of the bed.

The time required for healing is usually about eight weeks. After six or seven weeks, some form of fixed dressing, as plaster-of-Paris or pasteboard splints, may be applied; but it is not safe to allow the patient to walk before eight weeks have elapsed. You may sometimes be tempted to allow the patient to go about sooner than this, and, as a result, you may have consecutive shortening. I remember a patient in the Pennsylvania Hospital who had made a good recovery from fracture of the thigh, and was allowed to go about at the end of six weeks. There was at that time one-fourth or one-half of an inch of shortening. After two or three days there was found two inches of shortening. At this time the callus uniting the bones is soft, and the pressure from walking readily causes consecutive shortening.

#### Fracture of Both Bones of the Forearm.

Here is another fracture case. This boy applied to the hospital and had the limb dressed yesterday. It is a fracture of both bones of the forearm, resulting from falling down a hatchway. There is a great deal of effusion and ecchymosis at the seat of injury. When both bones of the forearm are broken we should adopt means that will keep the whole limb very still; and I think it better to keep the arm in the position of supination, as has been done in this case. If the radius alone is broken, I think it better to adopt the same position. If the ulna is broken the position is not so important. If we have a fracture of the radius, particularly of its upper extremity, the upper portion of the bone is supinated by the biceps muscle, which, as you know, is not only a flexor of the arm, but also, from the position of its insertion, a supinator. If there is solution of continuity of the upper part of the radius, the upper fragment will be supinated, and unless you supinate the lower fragment you will have union with an axial deformity, and consequently, when the bone has healed, there will be loss of the power of pronation and supination.

In case of fracture of both bones of the fore-

arm, a very important part of the treatment is to use such a splint as will prevent the two bones being brought close together. To a certain extent, this object is accomplished by the position of supination. We use in these fractures a splint a little wider than the forearm, so that the pressure of the roller may not press the bones together. You must not have them too wide, or the bones may become displaced. They are to be just wide enough to prevent the bandage from pressing against the sides of the arm. We use two splints; a palmar splint, extending from the bend of the elbow beyond the fingers, and a dorsal splint, extending from just below the tip of the olecranon to the wrist. There is no occasion for a long posterior splint.

In applying these splints I place a little cotton under the upper end of the anterior splint, to prevent pain. I also place a pad of oakum in the palm of the hand. We cannot very conveniently fix the elbow joint, except by supporting the hand in a sling, which answers very well. In bandaging always leave out the thumb; this gives the patient a great deal of comfort. You see that I do not apply any roller under the splint. This is the invariable rule in all fractures of the forearm. I do not know why it is, but most of the cases of gangrene from tight bandaging occur in the forearm. I have seen one case of gangrene from this cause. A young man had a simple fracture, I believe of the radius only. A physician dressed the limb and applied a tight bandage, and did not see the case for four or five days. On removing the bandage the whole forearm was in a state of gangrene. He was then admitted to the Episcopal Hospital, with which institution I was then connected as surgeon. The arm was amputated at the shoulder joint, but the patient finally died. If you do not apply a bandage under the splints, you cannot well cause too much pressure.

In addition to the bandage I apply two or three strips of adhesive plaster, to seal the dressing and prevent it being disturbed, either by accident or by the patient. The arm is then placed in a sling and the patient instructed to keep the hand constantly supinated. The length of time required for union varies, according to the age of the patient, from four to six weeks. In this case we can probably remove the splints and have the arm carried in a sling at the end of five weeks.

#### Fracture of the Neck of the Femur.

Here is another case of fracture of the thigh bone; but in this instance the neck is the seat of fracture. I shall not detain you very long with this case, as I wish to perform a little operation before the close of the hour. This patient has also received a fracture of the nose, involving the ascending branch of the superior maxilla. He has also received an extensive wound of the cheek. His injuries are the result of having been struck by a locomotive. As you look at his leg you observe the same symptoms as in the other case; but one symptom is much more marked, that is, the eversion. You remember I told you that when the neck of the bone was broken the eversion was much more marked than when the shaft was broken, as the whole weight of the limb is then allowed to act in turning the leg outward.

There was no shortening when the man was admitted, yesterday; but I suspect that we shall find some to-day, because, in fractures of the neck of the femur, the shortening is usually greater some time after the injury than immediately after it. This is due to the fact that some portions of the capsular ligament which had not at first given way do so afterward, and thus allow the limb to be drawn higher up. There is barely an inch of shortening.

There was another symptom well marked in this case; that was rotation of the trochanter in a smaller arc than natural. This is a mechanical necessity in fracture of the neck of the thigh bone. There is also depression of the trochanter. This is determined by comparing the three prominences, the anterior superior spinous process, the tuber ischii, and the trochanter.

In regard to the distinctions made in the books between inter- and extra-capsular fractures, I will say that it is a very difficult matter to distinguish between them. In the majority of cases the fracture is partly within and partly without the joint. A more practical division is that which has been made by Dr. Bigelow, of Boston; that is, into impacted and unimpacted fractures; for the treatment depends upon which kind of a fracture it is. If you have an impacted fracture, the shortening cannot be very great. You understand what I mean by an impacted fracture. It is one in which the ends are crushed together, as it were; the ends of the fragments become interlocked and are held together. If you were to make forcible movements, you would get rid of the impaction: but this is just the condition you desire to maintain. You must try to preserve the impaction, because in such cases you are more apt to get bony union. In such cases you will apply no weight at all, or else very light weight.

This is not an impacted fracture. We therefore need extension. We also need a certain amount of lateral support. The fracture being so high up there is not much tendency to outward bowing. We therefore substitute for the long splints, bags filled with sand. I put a pad of oakum under the heel and then pass the extending cord over the pulley. In order to diminish the tendency to eversion, I shall carry a loop of bandage around the foot and fasten it to the inner sand bag.

The time required for union is about the same as in fracture of the shaft; that is, from six to eight weeks. When the patient is allowed to get up it is not usually necessary to use any additional dressing, because there is no risk of consecutive shortening, and not so much risk of injury as in fracture of the shaft.

#### Tenotomy of the Tendo-Achillis and Plantar Fascia.

This little fellow is the victim of a disease of which we see a great many cases, that is, infantile paralysis. A form of nervous disease; a disease of the spinal cord, of which you have no doubt heard from Professor Wood. One result of this disease has been contraction of certain muscles, or as the fashion is now to call the condition, contracture. We have, on the right side, the heel drawn up and the sole of the foot turned inward, a variety of club foot known as

varus. If the heel is drawn up without inversion of the foot, the patient walking on his toes, we have talipes equinus, or horse's foot. If the deformity is in the opposite direction, the toes drawn up and the patient walking on his heel, we have talipes calcaneus. If the foot is turned outward, we have talipes valgus. Varus, the condition present in this case, is always accompanied with a certain amount of drawing up of the heel. Where the drawing up of the heel is exaggerated, the condition is termed equinovarus.

What I propose to do here, is to try and straighten the foot. I shall divide the plantar fascia and the tendo-Achillis, which I think will be sufficient. I do not want to divide the tibial tendons, if I can avoid it, as in these paralytic cases tenotomy, though often necessary, must be considered a necessary evil.

I can turn the foot out pretty well, showing that there is not much contraction of the tibial tendons. I use a delicate knife or tenotome in performing this operation. In dividing the fascia, it is better to introduce the knife between the

skin and the fascia, and cut downward. In dividing tendons, in most positions, it is better to pass the knife below the tendon and cut outward. I shall now divide the tendo-Achillis. Over these little punctures, I apply pieces of lint dipped in the compound tincture of benzoin and held in position by adhesive strips.

You see that now the foot can be brought into a respectable position. I now apply a flannel bandage to the leg, as it is more elastic than the ordinary bandage. Over this I apply a plaster bandage, making a few extra turns around the ankle joint. The foot will be held in this position until the plaster becomes hard, which will require about twenty minutes.

The patient will be kept in bed for a few days. In the course of a week or two we shall remove the plaster, and then I hope, by encouraging him to walk, for he still has some power in the muscles, to prevent, by the physiological use of the limb, any return of the deformity.

It may also be necessary, at some future time, to divide the ham-string tendons, but we shall do nothing further to-day.

## EDITORIAL DEPARTMENT.

### PERISCOPE.

#### Epithelioma of Leg.

In the *London Medical Times and Gazette*, Dec. 31st, 1881, Dr. Bloomfield, House Surgeon of the Devon and Exeter Hospital, reports an interesting case of epithelioma of leg in a young man—amputation below the knee—primary, and two attacks of secondary hemorrhage—subsequent recovery—under the care of Mr. Caird.

Nicholas S., aged thirty-six, was admitted into the hospital in May, 1881, with an excavated and apparently spreading ulceration, commencing over the internal malleolus, and running five inches up the right leg. He is a florid and healthy-looking man.

*History.*—He broke the right leg in its lower third when fourteen years of age; since then he says it has been somewhat crooked and smaller than the opposite limb.

*History of Present Attack.*—He had always enjoyed good health, and been able to get about in his work as a farm laborer, until twelve months ago, when he first noticed a small sore breaking out without any apparent cause (there is no history of any recent injury), about two inches above the internal malleolus. The ulcer spread somewhat rapidly, getting deeper, and was attended with a good deal of pain, but his general health had not suffered. His father died at the age of forty-five, six months after having an epithelial cancer removed from the lower lip.

*Present Condition.*—Late this ulcer has increased rapidly in size, and he feels weaker. There is an irregularly excavated ulceration, the lower edge of which corresponds to the right in-

ternal malleolus, extending up the limb five inches. Over the internal malleolus is an elevated, bright-red-colored mass, with edges slightly hardened, and on pressure discharging little masses of a yellow color, apparently epithelial debris. There has been occasional hemorrhage. The edges are not raised above the surrounding skin, except over the malleolus, in which direction the disease appears to tend to spread. The deepest part of the ulcer has, as its floor, the lower third of the shaft of the tibia, which is soft and necrosed, and evidently involved in the disease. It discharges a thin, puriform fluid. The femoral glands are enlarged, but he cannot say how long he has noticed this. Small portions of the growth were cut off, hardened in spirit, and examined microscopically by Mr. Bloomfield. The examination showed the growth to be well marked epithelioma, nests being very numerous and prominent in the sections examined. He was kept in bed, put on ordinary diet, and the wound dressed with carbolic oil. He appeared to be the better for the rest in bed; his appetite was good, and he complained very little of pain in the leg. The temperature before the operation was taken on several occasions, but was never above 99°.

On June 15th, Mr. Caird amputated the leg in its upper third. The bone appeared to be quite healthy at this point. No blood was lost during the operation, and after being left open for some hours the flaps were brought together with wire sutures, and the stump exposed to the air with a small piece of gauze over it. The evening temperature was 98.8°. At 10 p.m., hemorrhage (primary) came on; pressure failed to control it, and it was necessary to remove the sutures.

Several muscular branches were tied, and the bleeding ceased; the stump, however, was left open for ten hours, and then the flaps were brought together with silk sutures tied in a bow.

June 16th.—Temperature: morning 98.4°, evening 98.8°. Doing fairly well.

18th.—Free discharge of pus. Sleeps well, and does not complain of much pain.

20th.—Slight, but sharp, attack of secondary hemorrhage from the top flap at 8.15 A.M. Evening temperature 99.2°.

21st.—Violent secondary hemorrhage at 8.30 A.M. It was necessary to apply a tourniquet above, and again take out the sutures. The bleeding did not appear to come from any large vessel in particular, but depended on a general hemorrhage from the numerous vessels in the flaps and in the bone itself. Tinct. ferri. perchlorid. was applied. The flaps appeared congested and dark colored. A consultation of the surgical staff was held to-day as to the advisability or otherwise of secondary amputation. As it appeared, however, that amputation higher up would not probably do away with his tendency to hemorrhage, and seeing that, though there had been three attacks, on the first, sixth, and seventh days after the amputation, the hemorrhage had been brought rapidly under control, so that the actual amount of blood lost in the three attacks had not been so great as to reduce him to a desperate state, it was thought best for the patient to leave the flaps open and allow the wound to heal by granulation.

The subsequent history of the case may be briefly stated as follows: The sloughs formed on the surface of the flaps by the tincture of iron gradually separated, on one occasion being attended with some considerable hemorrhage, which was checked by applying a little more of the iron. The surfaces became gradually covered over by healthy granulations, from which there was an abundant discharge of healthy pus. His general health kept up remarkably well during the trying time through which he passed. In July a special splint was applied, and the limb kept suspended. During the next two months the flaps gradually contracted by granulations, and it was possible by pressure and strapping to bring the lower flap over the face of the amputation. Toward the end of September it had completely healed over; his general health was excellent; the glandular enlargement in the groin had disappeared; and he was discharged cured on September 29th.

*Remarks.*—The patient was of middle height, with dark hair and blue eyes; of florid complexion, there being two bright red patches on both cheeks. Medically, after the amputation, he was treated with large doses of steel and liquid extract of ergot. From the repeated hemorrhage, it is probable that there exists a hemorrhagic diathesis. The large glandular swelling in the groin, though it eventually disappeared, suggests the probability of some secondary deposit, and this led Mr. Caird to elect to amputate below the knee, because amputation above would have been attended by greater shock to the system, which might have so reduced his strength as to hasten return of the disease in the glands. The original disease no doubt began as an epithelio-

matous ulceration of the skin, and by extension involved the shaft of the tibia, which was superficially softened and ulcerated. The glandular enlargement may possibly be accounted for partly by the irritation caused by the large extent of suppurating surface; at any rate, the removal of the limb has had a beneficial effect in causing the enlargement to disappear.

#### Amygdalotomy and Suicide.

In a recent issue of the *London Medical Times and Gazette*, Dr. R. B. Taylor, L.R.C.P., says: In the course of an interesting and instructive clinical lecture on Amygdalotomy, delivered a short time since by the well known operator, Dr. Rubio, at the Madrid Institution for Medical Practitioners, attention was drawn by the lecturer to the frequency of suicide in young persons subsequent to excision of tonsils. Four cases of the kind, which have come under the personal notice of Dr. Ambrose Rodriguez, one of the able professors of the institution, formed the subject matter of Dr. Rubio's theme; and I hardly need say that this novel subject has aroused a considerable degree of interest in medical circles and societies.

On broaching the question of relationship between amygdalotomy and suicidal mania—a relationship which will in all probability elicit a variety of conflicting opinions and hypotheses—Professor Rubio calls attention to the immature age of the four individuals whose cases are recorded, one of whom had just completed his fourteenth year. This tender age precluding, as it does, all idea of thwarted passions, financial losses, blemished honor, *tedium vite*, or other etiological factors which in more advanced years commonly play so important a part in the production of suicidal mania, Dr. Rubio offers another view of the cause of this peculiar mental aberration.

The Professor's point of departure is the remarkable property which every portion of the pharyngeal isthmus, and especially the uvula, possesses, of causing reflex action in many and distant organs. The slightest touch of the uvula excites contraction of the whole digestive apparatus, from the jaws and their muscles to the pylorus, diaphragm and sphincters, creating gastric spasm and sickness. The most insignificant inflammation of the pillars or of the soft palate interferes with deglutition to a degree out of all proportion to the swelling of the affected part, just as a trivial pharyngeal angina causes violent efforts at swallowing and simultaneous overaction of all the facial muscles, not excluding even those of the eyes and eyelids.

The supposed naso-pharyngeal obstructing and voice-modulating functions of the uvula having been disproved by modern research, and no other special physiological uses having as yet been assigned to this organ, Dr. Rubio, taking into consideration the sympathetic responses of the digestive and respiratory organs to the calls of the palatal appendage, regards it as a *centre of gastric and respiratory reflex actions*. Bearing in mind the fact that the symptoms of disease in an organ of special reflex action are transmitted to every other organ with which they are physio-

logically connected, it is easy to account for those most diverse and apparently anomalous morbid phenomena which, due to a simple elongation of the uvula, betray their presence in larynx, lungs, stomach, heart, and head. We can, on the same grounds, explain, as Dr. Rubio has so forcibly pointed out, why certain apparently insignificant pharyngeal irritations give rise to those strange, pseudo-hypochondriacal and pseudo-hysterical groups of symptoms which, as occurring in both sexes, he has denominated pharyngeal hypochondriasis and pharyngeal hysteria.

According to Dr. Rubio, these pharyngeal reflex diseases possess features to some extent similar to those present in persons suffering from fissure of the anus. Just on the same principle as the sufferings of these latter patients induce a state of terror and mental depression bordering upon hypochondriasis, so also a fissure of the pillars of the pharynx, caused by the nipping of a portion of the same during excision of the tonsils, inducing thereby a state of incessant irritation of the unhealed pharyngeal fissure, kept up by the act of deglutition and the contact of solid and liquid food, may influence the reflex action on the brain sufficiently to lead to perversion of the affective faculties, despondence, or anger, and ultimately to self-destruction.

Whatever may be the fate allotted to Dr. Rubio's ingenious theory, the relationship between amygdalotomy and suicide is, beyond doubt, a topic well worthy of careful and attentive consideration.

#### Drainage in Ruptured Uterus.

We learn from the *London Medical Times and Gazette* that two cases in which this usually fatal accident was successfully treated by drainage, are reported in a recent number of the *Centralblatt für Gynäkologie* (1880, No. 26). One is reported by Dr. Morsbach. The patient was aged thirty-five, and had had four children, the last five years previously. Labor came on at full term. When vigorous pains had lasted five hours, the midwife ruptured the membranes. After this the patient, who had till then been standing, felt herself obliged to lie down, and the pains ceased. Three powders, obtained from a chemist, were given to bring on pains, without effect. Ten hours after the rupture of the membranes Dr. Morsbach saw the patient. The os uteri was about eight centimeters in diameter, and the feet could be felt presenting, but high up. A dose of ergot was given, without effect. The patient was then narcotized, and it was discovered that there was a rupture of the vagina and cervix uteri, and that the child was in the abdominal cavity, except one foot, which was within the uterus. The foot was seized and the rent carefully enlarged by numerous small incisions with scissors, till it would allow the child to be extracted. The hand was then inserted, and the placenta, which was in the peritoneal cavity, was removed. Two thick caoutchouc drainage tubes were put into the rent, and a pad of salicyl wool between the thighs. Slight pyrexia followed, lasting a little more than a week, with abdominal tenderness and tympanites. One drainage tube was removed the next day, and the other on the fourth day.

The patient got up on the fourteenth day. Fourteen weeks afterward she thought herself quite well. There was then a deep fissure in the cervix posteriorly, the bottom of which could not be reached by the finger, and a cicatrix in the posterior vaginal wall. Dr. Morsbach thought it possible that the midwife may have ruptured the uterus when she thought she was only rupturing the membranes, for she admitted that she had found great difficulty in doing what she did. The other case occurred in Berlin, and is reported by Dr. M. Graefé. The patient was in labor with her thirteenth child. The pains continued for six hours and then suddenly ceased. An hour afterwards she was found in a state of collapse, the face presenting, an arm down in front and a foot behind. Incomplete rupture of the uterus was diagnosed, and the patient was removed to the hospital. When she got there it was plain that the child was in the abdominal cavity, the contracted uterus being felt in front and to the left of it. The hand was introduced, a foot seized, and the child extracted; then the placenta was removed. The uterus was found ruptured transversely, only about three fingers' breadth of its wall remaining entire. The peritoneal cavity contained much clotted blood and meconium. It was washed out with a 2½ per cent. carbolic acid solution, and then a thick drainage tube, thirty centimeters long, put into the abdominal cavity and secured by a silk suture to the posterior commissure. A bandage was put round the abdomen, and on it an ice bladder. During the first two days the pulse was hardly perceptible. Hiccough and vomiting were troublesome during the first five days. The temperature did not rise till after the sixth day, when she began to have evening exacerbations of fever, which continued until the beginning of the fourth week, after which the temperature remained normal. After the sixth day the parts were irrigated from one to three times daily, through the tube, with a 2½ per cent. solution of carbolic acid. The tube was removed on the thirtieth day. The patient left, well, on the thirty-fifth day.

#### Frothing Urine and its Causes.

Dr. Kirk has an excellent study on this subject in the *Glasgow Medical Journal*, for October. He says:—

My observations have been chiefly confined to the urine, and especially to albuminous urine. It is evident that the spontaneous production of froth or air bubbles on the surface of any urine must depend on two causes: (1) a certain property of the liquid, and (2) the presence of gas in it. If any gas arise from decomposition, or air be introduced by agitation, these bubbles will form in proportion as the liquid possesses the property which gives rise to them. What class of urines most readily produce gases, or to what extent the production of such gases is to be regarded as pathological, I have not made the subject of observation; my attention has been solely directed to the degree in which various urines possess the property which enables these bubbles to form when a current of air of given amount is driven through them. Proceeding in this way I obtained the following results:—

1. Urine, whether normal or otherwise, is almost invariably frothy, so as to be easily distinguished from mere water by this peculiarity. This, indeed, any one may observe in the act of micturition.

2. The degree in which urine possesses the property on which this phenomena depends varies extremely in different cases, but it is never very great except in pathological urines. I have found it highest in—1. The majority of specimens of albuminous urine, but certainly *not in all*. 2. Certain high colored urines. 3. Some urines containing bile pigments, although in such cases it was not much above normal.

It was evident that the power of frothing depended on certain constituents, and the proportions in which they might be present. These constituents seemed to be, in healthy urine, the extractives (more especially, perhaps, creatinine). Not all the pigments, however, seemed to confer this property on the urine, for I have met with one specimen of a very high colored urine which gave scarcely any froth with the air current.

With regard to the plasticity of the fluid, he found:—

1. Serum albumen (equal quantities, as nearly as could be estimated, being compared) has greater plasticity than ovalbumen.

2. Fibrinogen, from hydrocele serum, and fibrinoplastin (serum globulin), from blood serum, have a high degree of plasticity, but I could not venture to say whether it is greater than that of serum albumen.

3. When albumen is transformed into acid or alkali albumen, or when the salt is removed from it by dialysis, the plasticity is at first not much affected, but in these cases it is sooner lost by keeping than otherwise.

4. When salt is added to an albuminous liquid the plasticity remains a long time. It also counteracts the effect of acid or alkali on the plasticity.

5. Any agent (as salt) which preserves the plasticity, also preserves the albumen longest from decomposition; or conversely.

#### True Ozena.

M. Calmettes, in a recent number of *Le Progrès Medical* (October 8th), has made a critical study of the works and theories on the above subject. The study of this affection has entered on a new phase, through the labors of Zaufal, Michel, Hartmann, and Gottstein. The thesis of M. Martin, a memoir giving the result of two autopsies by Hermann-Krause, and a large work by Cozzolino, giving a résumé of all the different opinions on the subject, are the latest additions to the literature of this disease.

The epithet "true ozena" is used to distinguish this disease from those cases of simple nasal catarrh in which the mucus collected in the nostrils is in the morning somewhat fetid. Some cases of ozena with notable fetidity are due to bone lesions, either syphilitic or traumatic. But in the great majority of cases, diathetic antecedents and bone lesions cannot be demonstrated, and such cases present such a uniformity of symptoms as to suggest the existence of one

causation in all. They are generally observed at the period of puberty, and when met with in adults it will be found that the troubles date from this period of life. Many explanations and theories concerning this affection were put forward before rhinoscopy was currently practiced. Sauvage, and recently Dr. Tillot, believed that in such cases there existed a stricture of the nasal fossæ, which caused the retention and subsequent decomposition of the nasal secretions. Trouseau, who had remarked that children suffering from this affection often enjoyed flourishing health, admitted a special fetidity of the secretions analogous to bromhydrosis. But, unfortunately for the patients, the general opinion was that ulceration existed, and caustics were employed, with or without irrigations.

The patients say that the nasal secretions are not liquid; that every second or third day they with difficulty expel from the nostrils large masses of hardened, greenish mucosities, of exceedingly fetid odor. They suffer from cephalalgia, and sleep sometimes with the mouth open the night preceding the expulsion of these masses. Generally there is no sign of scrofula, no anterior nasal affection, and rarely auricular complications, according to Michel, contrary to the opinion of Zaufal. The anatomical peculiarity in these cases has been shown by Zaufal to consist in the great width of the nasal fossæ, due to an exceedingly small lower turbinated bone, which can sometimes with great difficulty be distinguished; the middle turbinated bone is often of normal dimensions, and the mucous membrane which covers it is smooth, red, and sometimes granular, but without any trace of ulceration; this is demonstrated in the five autopsies of true ozena which have been published. Before the nose is irrigated there is such an abundance of crusts in the nostrils that their abnormal width is not evident, and there seems to exist a number of grayish ulcerations.

In accordance with the anatomical abnormalities found, Zaufal considers that the disease is due to the extreme width of the nasal fossæ, which permits the stagnation of mucosities and their decomposition, as they are constantly exposed to a current of hot and humid air; this renders the secretion fetid. Michel considers that this is not sufficient to explain the extreme fetidity, and considers the sphenoidal and ethmoidal tissues must be affected. Gottstein holds that histological investigation proves the existence of a catarrhal state of the mucous membrane, with atrophy and partial disappearance of its glands. These theories, with the exception of that of Zaufal, which seems the best founded, are not in concordance with symptoms observed in the majority of cases. The treatment indicated by the nature of the disease gives excellent results. After a few irrigations with a solution of chlorate of potash, Gottstein advises a tampon of cotton wool to be placed in one of the nasal fossæ; this tampon, occupying the place of the absent inferior turbinated bone, narrows the nostril sufficiently to enable the patient to expel the mucous secretions in a liquid form, before they have acquired any odor. The tampon, soon covered with adherent mucosities, is expelled spontaneously on the second or third day. The effect of this measure is so assured that it is not

absolutely necessary to remove the dried crusts by preliminary irrigation. Gottstein is of opinion that this application irritates slightly the atrophied mucous membrane and induces a more normal secretion; but this explanation appears, to say the least, insufficient, as the tampon is applied on one side only. This treatment seems to prove very effectual, and is even used by M. Fournier, who considers the disease due to a fetid secretion (exhalaison) from the glands of the nasal mucous membrane.

#### Two Cases of Peritonitis Apparently Due to Diphtheria.

Dr. William C. Dabney, of Charlottesville, Va., writes to the *American Journal of Medical Sciences*, for October, 1881:—

In the months of December and January last there occurred in a large female school in this vicinity an epidemic of measles. The cases were, I learned from the attending physician, Dr. Bowcock, generally mild, and all, so far as I know, terminated in recovery.

Following on the heels of the measles there occurred an outbreak of diphtheria, which, with the exception of two cases, was so mild in character that the disease was not at first recognized, and Dr. Bowcock was not called in.

No cause could be found for the outbreak. It may safely be affirmed that no institution in the country is better managed, and nowhere is more attention paid to the hygienic surroundings of the pupils.

CASE 1.—About the 10th of January, Miss M., one of the teachers, about 26 years old, was taken with quite a severe sore throat, but as there was no diphtheria, so far as known, in this section at the time, no apprehension was felt. She was much better in a few days, and about the 15th her monthly sickness came on. This ceased on the 20th, and on the 22d she came to Charlottesville, a distance of six miles, on the train, and was very busy all day. She returned on the afternoon train, much fatigued, and when she reached home she complained of "cramps" in her abdomen, but ate a hearty supper. In the night she suffered so much that she took some laudanum, and the next morning was well enough to be at breakfast.

During the day of the 23d she complained a good deal of pain, but Dr. Bowcock did not see her till the 24th, when he found her with considerable fever, marked tenderness in the lower part of the abdomen, a quick and rather weak pulse, and great nausea. Appropriate remedies were administered, and that night she seemed better, but the following day, January 25th, he found her with an extremely weak pulse and in a state of collapse. I saw her, at Dr. Bowcock's request, about 3 o'clock on the afternoon of the 25th, and found her in a state of extreme prostration, pulse almost imperceptible; there was great restlessness and tenderness over the whole abdomen. She sank rapidly and died at 5 o'clock the same evening, consciousness being preserved almost to the last.

We were strongly inclined to attribute the peritonitis in this case to diphtheria, though neither of us had seen or heard of such a case before, nor

had Dr. J. S. Davis, of the University of Virginia, who was kind enough to come to our assistance, but who reached the house only a little while before the young lady's death.

CASE 2.—On the 5th of February following, I was called by Dr. Bowcock to see Miss O., one of the pupils in the school. She was suffering with diphtheria, and there was marked tenderness and pain in the abdomen, especially about the lower part. Her pulse was very feeble, and her temperature high (I cannot recall the exact figure). Full doses of opium were administered and hot applications made to the abdomen.

Dr. Davis was kind enough to see this case with us the next day, and he agreed with us in the diagnosis, and gave, as we had done, an unfavorable prognosis. She threw up, on the 6th, a good deal of false membrane, and we were informed by one of those in attendance on her that she had passed membrane by the bowels also. The case ran a very similar course to the previous one, and the young lady died on February 7th.

The occurrence of peritonitis as a sequel or complication of diphtheria seems to be extremely rare, if we may judge from the fact that it is alluded to by very few writers on the subject.

#### High Local Temperatures.

Dr. William Squire contributes the following interesting information to the *London Lancet*:—

A long attention to surface thermometry, while revealing numerous sources of error, such as undue or unequal warming or covering of the part to be examined, shows some very real and important differences; these deserve careful note, and will some day admit of useful generalizations. As a provisional deduction, it may be stated that these natural variations seldom exceed by as much as 4° or 5° that of a corresponding part of the surface, and are still more rarely even a degree above the internal or general temperature of the body. How largely the reverse of this may be possible is well known. Collapse may set in from an intense fever at its height, and the limbs be algid while the head and body burn. During scarlet fever the temperature *in recto* has been 105°; and at the same time only 97° in the skin of the abdomen or in its folds. In the axilla an accurate surface thermometer has marked 103° on the thoracic side and only 98° on its brachial aspect; this was found in acute pulmonary congestion near the close of chronic lung disease. In right hemiplegia of two months' standing the paralyzed arm and the left side of the face were two and three degrees higher than the parts unaffected; the surface temperature of the head over the side corresponding to the supposed seat of cerebral lesion being 1½° lower than the opposite side. From some obscure affection of the cervical sympathetic, probably, an active man thirty years old has a persistent flush on the left side of the face. This is worse when he is heated; on any little exertion or excitement that side of the face and forehead are bedewed with perspiration; the temperature, while he is at rest in a cool room, is 4° higher on the left temple than on the right; it was 90° on the right and 94° on the left temple

in the morning of a cold day. A difference of a half a degree is frequently found on the two sides of the forehead. The range in health at various times of the day and under varying conditions is usually from 92° to 96°, but the difference between the two sides is seldom as much as half a degree, and the left temple is rather more often the higher than the right. There are some conditions of hemi-anæsthesia and hyperæsthesia where the symptoms more or less suddenly change from side to side, that have a like curious variation in temperature. These cases have a variation of only two or three degrees, and are not limited to hysterical subjects. A temperate man near the age of forty had to lay up for three weeks, for pyelitis and renal irritation, with severe headache, chiefly on the left side; in early convalescence, with normal temperature *in ore* the right temple was 96.4°, the left 94°, and it was noted as curious that the temperature of the right axilla was only 97.6°, while the left was 98.2°. The following week, during a relapse, the temperature at noon *in ore* was 100.6°, that of the right axilla 101.6°, of the left 100.3, both temples close on 98°. At night the general temperature was 101°. His temperature on the next day at noon was 98.6° *in ore*, 98.8° *in recto*, right axilla 98.2°, left 97.4°, right temple 94°, left temple 94.5°. Urine pale, sp. gr. 1.016, slightly turbid, mucous deposit, a trace of albumen. Pulse 80, respiration 18. Before recovery was complete headaches with loss of sleep recurred, with shifting of the increase of temperature from the right axilla and right side of the trunk to the left side, and of the higher head temperature from the left to the right, and *vice versa*, more than once.

#### Bromine Topically in Chaneroids and Chronic Ulcers.

Dr. J. L. Robinson, of Louisville, Kentucky, writes, in the *American Practitioner*, for November, 1881:—

Within the past few months I have had opportunity of testing bromine as a local application to chaneroids and chronic ulcers, associated with syphilis, as seen in the United States Marine Hospital in this city. The following is the formula used:—

R. Bromine, one part; water, three parts; bromide of potash, q. s. to make a solution. To be applied once daily by means of a mop made of cotton wool.

I subjoin a very brief report of a few of the cases treated:—

CASE 1.—W. C., colored, chronic ulcer of two years' standing over the anterior middle third of the tibia. First seen April 1st, when the granulations were large, flabby, and raised, and the surrounding tissues excessively indurated. Applications of nitrate of silver and sulphate of copper were used daily for nearly a month without effecting any change in the character of the sore. May 1st, I applied the bromine solution and continued it daily. Each application was followed by oakum to the sore and a flannel roller to the limb. In two weeks the granulations came to a level with the surface and were of healthy aspect, the surrounding integuments grew soft and pliant, and cicatrization set in. Some

weeks after the ulcer was reduced half its former size, and healed rapidly.

CASE 2.—C. H., colored, admitted June 30th, having a large ulcer of six months' standing, situated as in Case 1, and altogether of similar character. The bromine, oakum, and the roller were at once applied. Improvement was noticeable from the first day, and speedy cure seems assured.

CASE 3.—S. H., white, admitted July 12th, with an ulcer of both legs, just above the internal malleoli. Much the same appearance as in cases just described. The same treatment effected almost at once the most striking change, and in four weeks the patient was discharged cured.

CASE 4.—A. L., colored, admitted July 2d, ulcer four square inches in size, of six months' standing, situated just above the ankle on the inner side of the right leg, cup-shaped, covered with a greenish slough, and made offensive by a fetid, ichorous discharge. The bromine, etc., quickly reduced the ulcer two-thirds in size, besides converting it in all respects into a healthy sore, which gives promise of uninterrupted and quick cure.

CASE 5.—J. L., white, admitted August 2d, with a large, indolent ulcer of two years' standing immediately above the external malleolus of right leg. Numerous smaller ulcers existed in the region of both ankles. Bromine, oakum, and the flannel roller accomplished much the same results as in the previous cases.

Fifteen grain doses of the iodide of potassium, given three times daily, made up the constitutional treatment in the foregoing cases, except in Case 1, where cod-liver oil was deemed advisable.

I have also used the bromine in several cases where, after the operation of circumcision, inoculation of the entire raw surface had occurred, with equally good, I might even say with better results than in the leg ulcers.

#### Alcohol in Therapeutics.

In a communication on this subject, to the *Medical Record*, Dr. Lewis D. Mason, of Fort Hamilton, N. Y., says that the medical officers of the Inebriates' Home, at Fort Hamilton, have, within the past two years, adopted the plan suggested by Dr. Benjamin W. Richardson, of prescribing pure alcohol instead of wine, beer, or whisky, whenever, in the treatment of various forms of alcoholism, the use of alcohol was indicated, and have found the following benefits to proceed therefrom:—

1st. The satisfaction of having a solution containing a definite percentage of alcohol, thus providing an exact system of dosage.

2d. A very marked saving, and therefore, a method of value from an economical point alone, especially in those institutions where the liquor bill is a large item of expense.

3d. The moral effect on the patient, in compelling him to at once break off his accustomed stimulant, and providing a "medicine" as an efficient substitute.

4th. The advantage which the alcohol has over brandy, whisky, etc., is that, owing to accuracy and concentration of the dosage, the patient convalesces in one-half the time and with less suffering.

Another advantage which this method of prescribing alcohol possesses is the lesson which the community will receive, in a quiet way, that the proper place for alcohol in any of its forms or combinations is the shelf of the pharmacist.

Moreover, in a properly compounded prescription containing alcohol, the physician will have a much greater control of the future physical and moral welfare of his patient, than if he directed him simply to take alcohol as contained in one of the various forms of liquor in common use. The alcohol should always be disguised by the addition of the various carminatives or bitter tonics, and also colored by caramel, so that the patient may not be unnecessarily informed as to what he is taking.

#### Hemorrhage due to Foreign Growth.

Dr. W. H. Lewis, of Graysonville, Mo., sends the following report of a case to the *Louisville Medical Journal*, for December, 1881:—

About a week ago I was called in haste to see Mrs. B., who had been suffering for several days from what she took to be painful menstruation. I found patient looking very pale and flooding profusely. Her clothing and the bedding were saturated with blood. I called for warm water, and while waiting for it, I removed the pillows from her head and elevated her hips instead. On making a digital examination I found the os dilated and bright arterial blood flowing from the uterus. Cold cloths were applied to the abdomen and warm water injected every half hour. Soon the hemorrhage was under comparative control. I also gave several large doses of fluid extract of ergot and stimulants freely.

As she still continued to have considerable hemorrhage, I made repeated efforts to introduce my hand into the uterus, and succeeded in introducing two fingers, when I found attached to the uterine walls a fleshy lump about the size of a hen's egg. After repeated efforts I succeeded in detaching this and removing it, when the hemorrhage ceased entirely and did not return. Under tonics and liberal nourishment she is now doing well.

#### Infectiousness of Blood and Urine of Tuberculous Animals.

The *Glasgow Medical Journal* for January, 1882, makes the following interesting report of some experiments on this subject, by V. Lentz, of Griefswald:—

In six rabbits he injected fresh blood of tuberculous rabbits into the lungs through a tracheotomy incision. In all of these, killed in from 92 to 216 days afterwards, he found milary tubercles in the lungs, and in four of them in the liver as well. In one he found caseous masses in the lungs.

In all of four in which the blood was injected subcutaneously (killed after from 125 to 148 days) he found milary tubercles in the lungs, and in two of them in the liver as well.

In one the blood was injected into the joint and adjoining connective tissue. The knee became swollen by the third day; on the 18th the animal died, and dissection showed stinking case-

ous suppuration in the joint, and tubercles in the lungs.

Two rabbits were subjected daily, for 71 days, to an atmosphere charged with steam containing from 30 to 40 ccm. of freshly voided urine from tuberculous animals. After death the lungs were found full of minute sub-pleural ecchymoses and numerous peri-bronchial tubercles.

With three others "phthisical urine, which had been allowed to stand for several days in a warm room, was used. One died on the ninth day, after aborting, and examination showed in the peri-bronchial connective tissues numerous masses of round, well defined nucleated cells, "undoubtedly commencing tubercles." In the others (killed on the 48th and 60th days), tubercles, less numerous, but more uniform in nature and position than in the rabbit treated with fresh urine, were found.

In all the sections of tissue examined, a decided thickening of the arterial coats was observed.

#### Joints from a Case of Gout.

At a recent meeting of the Pathological Society of London, Dr. Norman Moore showed the knee, larynx, kidneys, and brain of a man who died a few hours after admission into hospital. The patient had had repeated attacks of gout. A deposit of urate of soda was found in various joints, but not in the vertebral joints; the amount of deposit in the knee joints was very remarkable; and in the right knee joint a quantity of purulent fluid was found. The kidneys were in an advanced stage of interstitial nephritis. On the left side of the cerebellar hemisphere there was a white plate in the pia mater. This plate contained a trace of uric acid. The bony tissue of the tibia contained no uric acid. No trace of lead could be found in the liver; lead, Dr. Moore observed, probably merely tended to produce gout by checking excretion, and not by any more direct action. Dr. Dyce Duckworth observed that the relation between gout and lead poisoning was a very certain and very interesting one. He thought this an interesting case, inasmuch as it was clearly shown that suppuration had occurred in one knee joint. This was a very rare condition; in some of the other cases on record the patients had suffered from erysipelas; but in this case there was no history of erysipelas, and therefore it might be regarded as a true case of suppuration in a gouty joint. Dr. Carnow said that two years ago he had examined a body in which nearly every joint of the lower limbs contained urate of soda; but in this case there was no suppuration. The vertebral joints and the joints of the upper limbs escaped. He thought that any suppuration which occurred in gouty joints was an accidental complication.

#### Medicine in Japan.

According to a recent return, Japan possesses 159 hospitals, in which the patients are treated on principles recognized by Western nations. Vaccination is performed gratuitously, and is compulsory. Moreover, a sort of Medical Act has been lately passed, by which persons without certificates are prohibited from practicing medicine or surgery.

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#### STEAMER SURGEONS.

The English journals are just now discussing the position of surgeons on steamships and sailing vessels. It seems that their position is, indeed, a very anomalous one. They are poorly paid, their authority is very limited, and their duties ill defined. This is, in reality, a much more serious question than would at first thought appear. Americans, as great travelers, are much interested in this subject, and a few thoughts pertaining to it will, indeed, be of interest and importance to them.

What sensible person would take up his residence in any locality without first inquiring whether a competent physician was near at hand. It would be, justly, a very essential consideration. How is it on the ocean steamers, plying between America and Europe? The surgeon of a trans-Atlantic steamship is usually regarded as a very ordinary physician. Why? Because the pay is so little that it is impossible for the companies to secure the services of gentlemen whose ac-

quirements are sufficient to procure them lucrative practice on shore. What are the results of this state of affairs? Few tourists stop to realize them. A man takes his family on board a steamship bound for Liverpool, and no matter what medical emergencies may arise, no matter how sick any of them may become, for the space of ten days or two weeks the only medical attendance they can possibly receive is that furnished by the ship's surgeon. If he be competent, so much the better; if he be not, then the poor patients must suffer the consequences, since it is utterly impossible for them to change doctors, unless, perchance (which rarely occurs in proportion to the number of trans-Atlantic voyagers), some capable physician happens to be among the passengers.

Suppose on a stormy day, one of the passengers falls on deck, or is thrown down stairs and breaks his leg; and suppose the physician of the ship is not a good surgeon; life deformity may result. Suppose a man has hernia, and during the voyage it becomes strangulated; if a good surgeon is not at hand, he must die. We could suppose a hundred surgical emergencies that might and do arise during an ocean voyage, requiring immediate application of accurate knowledge, with death as the alternative of lack of this familiarity with surgical science. The position of surgeon on an ocean steamer is by far the most responsible position in which a physician can be placed. When, on shore, and particularly in a large city, a physician is called to a case beyond his compass, he has a large number of medical brethren from whom to select one more competent than himself. How different at sea, when single handed and alone the ship's surgeon must be prepared to intelligently master any emergency that may arise, without one word of advice, encouragement or counsel, and without any division of responsibility. Truly, indeed, may his position become a trying one, such a one as to tax the ability of the greatest and most experienced of surgeons. How, then, can it be reasonably expected that such a responsible position can be capably filled for the paltry sum of seven or eight hundred dollars. We would

ask any of our rich and aristocratic European tourists whether they would trust the lives of their wives, their children, or themselves in the hands of a physician whose abilities were of such a calibre as to command a practice of only seven hundred dollars a year. Yet, whenever they cross the ocean, they not only do trust to such medical ability, but they do so absolutely and without the possibility of calling in one more competent.

How, then, can this state of affairs be remedied? By the establishment of a thoroughly efficient, graded merchant medical service, based upon the plan in vogue in the navy. Each steamship company should have its well paid medical superintendent, and each vessel should have *two* well paid medical men. With a salary of three thousand dollars for the surgeon, and two thousand for the assistant surgeon, such talent and experience could be secured as would render the lives of ocean voyagers reasonably secure, and would assure them of proper medical attendance.

The additional cost to the steamship lines would be comparatively small, and when viewed in the light of duty and justice to passengers, would be money well spent. The company inaugurating such a plan would find their passenger traffic more than they could accommodate, as soon as their reform became known. Such remuneration would induce capable men to apply for the positions, while an initiatory, followed by periodical examinations (uninfluenced by favoritism) would keep the service thoroughly efficient.

#### THE NATURE OF THE CAUSES OF DISEASE.

It is very discouraging, when we consider the great antiquity of the art of medicine, to realize how little accurate knowledge we possess of the intimate nature of the causes of disease, and how diverse are the views of eminent men on this subject, thus demonstrating by this very diversity how uncertain and untenable are the views held by each.

A remarkable illustration of this is afforded by the result of recent investigations into the nature of the specific poison capable of produc-

ing periodic fever. TOMMASI-CRUDELLI makes some elaborate investigations and experiments, and announces to the world that he has at last discovered the true nature of this poisonous germ. Dr. STERNBERG is ordered to investigate his experiments, and as a result comes out with a flat denial of the Italian's conclusions. Now who are we to believe, and what shall we accept. After many months of hard labor abroad and at home, we are left in as much doubt and know as little as we did before. Must it not be discouraging to CRUDELLI to have his conclusions emphatically denied, before they have hardly been made public. Still it is proper that this should be, since error must always be at once corrected.

Again, a writer treating of the Japanese disease, *Kakki*, says, "It is the opinion of those who have studied the disease that it is caused by a specific poison. Dr. D. B. SIMMONS, of Yokohama, whose residence of over twenty years in Japan, and familiarity with the disease in all its phases, entitle his opinion to the highest respect, believes that its cause is "*a specific miasm, or soil exhalation, like paludal malaria.*" Overcrowding, bad drainage and bad ventilation seem to develop the poison in systems debilitated by these or other causes, as sedentary occupations, labor, low diet, or non-assimilation of food; while non-acclimatization, occupation, diet, season and sex, seem to be the principal predisposing causes." Truly a comprehensive etiology, one whose very extent argues its uncertainty.

So it is with the most prevalent and most fatal diseases. Diphtheria is a remarkable illustration; smallpox, yellow fever, and cholera are the same. It may be argued that we do know the nature of the cause of these latter diseases, since we know that they are produced by contagion. But we do not understand the nature of the element which is the active agent in this contagion. We do know how to avoid smallpox, yellow fever, and cholera. We know how to escape from a malarious atmosphere, and how to alter such a locality into a harmless and healthy place of residence. Does it not seem likely that we never will be able to thoroughly understand

this minute etiology of disease. Will it not forever elude our grasp? Is there not a limit to human penetration, and is not this knowledge only to be found in the space outside of this limit? Some will say, yes; some, no. Let those who desire to so amuse themselves go on in their studies; if they ever reach any definite conclusions, which we doubt while we pray for, the world will be greatly benefited by their studies.

In the meantime the majority of physicians should be practically utilizing that prophylactic knowledge which we do possess. It should be their first duty to warn their neighbors against the causes of disease existing in their vicinity; and their second duty to endeavor to cure such disease, when contracted in spite of their caution. An ounce of prevention is worth many pounds of cure, and it becomes the conscientious duty of every respectable physician to utilize this preventive power.

## NOTES AND COMMENTS.

### Post-mortem Contagiousness of Diphtheria.

Dr. G. S. Gerrard writes to the London *Lancet*, detailing a case which tends to substantiate the idea that a person may catch diphtheria from one dead of the disease. Two young persons were engaged to be married. The man was seized with diphtheria and died. The body was removed, for interment, to the town in which the girl lived. The coffin was opened, and no doubt the girl kissed her lover. Three days afterward she was seized with diphtheria. There were no other cases in the vicinity, neither had a severe case been known there for nineteen years, and its production could only be traced to contagion from the dead body. This circumstance gives us a hint as to the handling of those dead from this disease.

### Transient Mania from a Bed-Bug in the Ear.

Dr. A. B. Kibbe reports, in the *Rocky Mountain Medical Times*, a curious case which well illustrates the power of imagination. He was consulted by a woman, sixty three years of age, who said she had been awakened early in the morning by a bed-bug crawling into her ear. Examination revealed a minute black speck directly in the centre of the membrana tympani.

The ear was filled with glycerine, and upon subsequent inspection the object had disappeared, and she felt much better. A pellet of cotton was placed in the ear. Four hours later he was called to see her, being told that she was "crazy." She was found crouching in a corner, almost nude, screaming and beating the floor with her hands. In about an hour she became quiet enough to say that she had pushed the pellet of cotton into her head, and begged for its removal. An examination afforded an unobstructed view of the drumhead. A friend slipped a small wad of cotton into his hand as he withdrew the speculum. Upon seeing the cotton (the supposed presence of which in her head had been the cause of her mania), she experienced immediate and complete relief.

### Treatment of Acute Articular Rheumatism.

We read in the *Concours Medical* (No. 48), that Dr. Carpani, having made numerous observations, and studied the best authorities on the subject, has divided the different methods of treating this affection into the following four groups, each with special indications:—

1st. Salicylate of soda is useful in cases of acute febrile polyarthritis, attended by highly localized articular manifestations. It is contra-indicated by the concomitance of cardiac affections, nervous troubles, or gastro-intestinal or renal difficulties.

2d. Bisulphate of quinine is indicated in cases where rheumatism is a manifestation of, or associated with, malarial infection.

3d. Benzoic acid should only be used when nephritis is a complication of acute articular rheumatism, attended by fevers.

4th. Blisters (Dechilli's and Davies' method) are the most reliable agents for curing mono-articular rheumatism, or that form in which but few articulations are interested.

### Papaine in Diphtheritic Conjunctivitis.

Messrs. Bouchut and Hubert have lately met with quite a number of cases of diphtheritic conjunctivitis in the Hôpital des Enfants Malades. They have treated this hitherto somewhat rare disease with applications of papaine dissolved in distilled water:—

R. Papaine, 2 grams = (3 ss).  
Distilled water, 8 " = (f3 ij). M.

and the children have all been cured. Quite lately another child suffering from this species of diphtheritis was similarly treated and recovered in three days' time.

**Intestinal Invagination.**

The *Concours Médical* reports a case of intestinal invagination, observed by Dr. Grosoli, which terminated in a very surprising manner.

A child, ten years old, had eaten oranges and lemons, swallowing skin and seeds, as is often done in the south of France. He was taken with violent pains, and vomiting soon set in. Castor oil, and other purgatives, injections, leeches, hypodermics of atropine and morphine, hot and cold applications, electricity, all were without effect. The symptoms grew daily more serious; vomiting became fetid and stercoraceous, and the abdomen extremely painful to the touch. The little patient had thus laid for twelve days, agonizing, and only sustained by nutrient injections, when Dr. Grosoli conceived the idea of administering 30 grams = (3 viiss) of mercury. Two hours after this had been taken there was an expulsion of gases and fæces mixed with blood and mercury. This passage brought on some relief, but the pains only ceased on the evacuation of a membrane having a strong gangrenous smell. On the following day the patient passed a piece of the lesser intestines 40 centimeters = (15.7 inches) long, and for a period of fourteen days he continued having slight pains in the abdomen, and at intervals passing fragments of intestine. The case progressed most satisfactorily, and at the end of a month the child was entirely cured.

**Bacteria as a Cause of Leprosy.**

From the *London Medical Times and Gazette*, we note that Dr. Cornil arrives at the following conclusions concerning the seat of bacteria in leprosy and the lesions of organs in this disease. The tissues which he examined were so filled with bacteria, and so modified, that it was difficult even to determine what organ he was dealing with. The lesions in their direct relation to the bacteria were divisible into two series.

1. The leprosy tubercles and infiltrations are characterized by large cells in colossal numbers, which infiltrate the diseased tissues and are filled with minute bacteria. When the leprosy infiltration attacks a soft organ, like the liver, or one possessing natural cavities, like the testes, the bacteria become very voluminous. 2. In most of the fibrous tissues the bacteria throw out long filaments in the interstices of the fibres, the fixed cells of the fibrous tissue being little changed or normal. Sclerosis or thickening of the fibrous tissue, however, often resulting in leprosy. The disease seems, beyond doubt, to be caused by the bacteria.

**Curious Case of Aneurism.**

Dr. J. A. Temple reports a singular case of popliteal aneurism, in the *Canada Lancet* for January, 1882. The aneurism was first treated by digital compression, which was persistently maintained for thirty-two hours, at the end of which time both pulsation and bruit had disappeared, and remained absent for four days. Gradually, however, they both returned, with swelling, which extended upward on the thigh. Operative interference was refused, gangrene supervened, and the patient died. The post-mortem revealed a spiculated outgrowth of bone from the posterior and upper part of the inner condyle of the femur, measuring one and a half inches in length, and terminating in a sharp point. This point had penetrated the sac, and was, most likely, the primary cause of the aneurism, by injuring the coats of the artery. The patient was only twenty-four years old.

**Smallpox and the Paper Makers.**

The *Sanitary Engineer* says: Among the many modes of spread of smallpox, that by means of rags merits special attention. That the danger is by no means an imaginary one, is shown by the experience of Holyoke, where several cases of, and deaths from, this disease have occurred. That all rags should be thoroughly disinfected by heat, chlorine or sulphurous acid gas, or by a combination of these methods, before they are given to the sorters, and that all employés in paper mills should be vaccinated, are simple common sense suggestions which should commend themselves to the owners and managers of such establishments, and which health authorities should use their influence to secure.

Physicians living in the neighborhood of mills should make it their duty to call the attention of manufacturers to this danger.

**Antiseptic Properties of Essence of Wintergreen.**

We see in the *Concours Médical*, that Professor Gosselin and Dr. Bergeron have experimented with oil or essence of gaultheria (*gaultheria procumbens*), wintergreen, and have obtained good results from it, as an antiseptic in the dressing of sores.

Essence of wintergreen is much used in perfumery; it has an agreeable odor, and is insoluble in water, but soluble in alcohol.

Two solutions are used by Prof. Gosselin:—

No. 1. Oil gaultheria,	f3 i℥
Alcohol 60°,	f3 xliiss
and No. 2. Oil gaultheria,	f3 ℥
Alcohol,	f3 iij-f3 j
Water,	f3 xliis

## SPECIAL REPORTS.

## No. III.—INFECTIOUS DISEASES.

So much additional light has recently been thrown upon the nature and treatment of contagious or infectious diseases, that a special report on this subject will be interesting. It is in the field of medicine to which infectious diseases belong that we must necessarily look for the greatest strides in preventive medicine. When we succeed (if we ever do) in acquiring an intimate acquaintance with the active causative agent of these diseases, and when we know how to render abortive and powerless this agent or these agencies, then, indeed, will preventive medicine rank, as it justly should and surely will, as the highest branch of our great science. Many great men are now actively engaged in endeavoring to unravel the mystery of causation, and much good work has been done in this direction, which gives abundant promise that great success will crown their efforts in the future. Among these earnest laborers in this interesting field we may make mention of such well known names as PASTEUR, TOUSSANT, KOCH, KLEBS, TOMMASI-CRUDELLI, and LISTER, in the Old, with those of STERNBERG and WOOD, in the New World. Such names guarantee earnest and conscientious work, and are full of promise of success.

We will take up the principal contagious diseases in order (commencing with diphtheria), and will concisely state the most recent views and facts concerning their etiology, pathology, diagnosis and treatment. Smallpox will be treated in a separate report.

**Diphtheria.**

*Its Etiology.*—In his "Practice of Medicine," published in 1868, FLINT seems to have very vague and indefinite ideas concerning the causation of diphtheria, as evidenced by the fact that his remarks on its etiology are confined to asking the question, "Is the special cause a contagious virus or an infectious miasm?" After which, for a few lines only, he discusses the question of its contagiousness or communicability, and concludes by regarding the question as *sub judice*.

Since that period much labor and time have been expended in endeavoring to penetrate the mysterious cause of this disease, and while we do not yet certainly know its nature, still we have made progress, and know more to-day than he did then.

As far back as 1858, Professor LAYCOCK, of Edinburgh, advanced the theory, in the London *Lancet*, that the exudation of diphtheria was due

to the *oidium albicans*, or potato fungus, in support of which theory it was stated that GRUBBY, of Paris, in 1844, had shown by the microscope that in pseudo-diphtheria, or muguet, and in thrush, the buccal pellicles displayed the tubular filaments and mycelium of a vegetable form analagous to oidium. At the time, this theory was not generally accepted, since the microscope failed to furnish sufficient evidence of the presence of vegetable growths in the false membrane. But in 1880, the eminent English fungologist, Rev. JOHN E. VIZE, M.A., published a paper, in which he strongly maintained the dependence of diphtheria on an oidium.

More recent investigations tend to show that diphtheria is an infiltration of living tissue with micrococci, and that their development is intimately associated with the morbid process. From an address of Dr. MICHAEL W. TAYLOR, of Penrith, published in the *British Medical Journal*, July 2d, 1881, it would seem that the pseudomembrane consists of layers of stratified epithelium, more or less mingled with products of exudation from blood plasma and some micrococci, while in the submucous tissue the channels communicating with the lymphatics are filled with micrococci, or masses of vegetation. This would seem to encourage the belief that the disease is due to the development and active life of vegetable matter within the body. The most recent investigations on this subject have been made by Professor H. C. WOOD and Dr. HENRY F. FORMAD, of Philadelphia. They were conducted at the suggestion and under the auspices of the National Board of Health. After many experiments, they have reached the conclusion that micrococci are the *fons et origo mali* of diphtheria.

Thus much, therefore, we know, and no more. It is truly little enough, but it gives promise of more in the future. We know that diphtheria is caused by a parasitic vegetable growth in the body. The most valuable research now in order will be to endeavor to discover some agent capable of destroying the vitality of this growth, from which we may be able to devise some means of preventing the disease. Medical journalism contains many discussions as to the origin of the micrococci of diphtheria. Some maintaining the doctrine that they are produced as a direct result of vegetable decomposition, while others stoutly deny this proposition. Whether they are or not is of but little real practical value as long as they exist. When a man breaks his leg a sensible surgeon will set it first and inquire how it happened afterwards. So it will be better for ex-

perimenters and investigators to devise first some effectual means of destroying the vegetable parasite and subsequently determine its origin. In connection with the etiology, we may state that the weight of evidence is in favor of the doctrine that diphtheria is a blood, or systemic, or constitutional disease, and is contagious. We may also allude to the fact that some observers have endeavored to establish an identity between croup and diphtheria. The weight of evidence is also against this affinity, and justly so, since croup is proven to be a sthenic, while diphtheria is undoubtedly an asthenic disease. It will be of interest to note some of the means by which the disease may be carried. It was stated at the recent International Medical Congress that seven epidemics of diphtheria were traced directly to infected milk. Five hundred cases were clearly shown to be due to drinking infected milk. If the disease is due to micrococci, then it is self evident that it can be communicated by any medium capable of carrying these micrococci, and we must say that the same channels of infection exist for diphtheria as for smallpox. But, in his recent work on this disease, Dr. JACOBI takes ground against the germ theory. So much for our minute researches into the realms of microscopy. One man or a set of men erect a structure of experiments upon the summit of which he places the resultant fact; when along comes some iconoclastic investigator, whose name and fame are great, who, with one blow, topples the structure to the ground (just when the rank and file were about to accept it), denies the truth of the theory, and either advances a new one, to make confusion worse confounded, or leaves us without any explanation, thereby increasing the doubt in our minds and causing us to wonder whom to believe. To sum up, then: We have no accurate knowledge concerning the nature of the causative agent of diphtheria, but the weight of evidence is in favor of the theory that the disease is caused by the entrance into and the development and multiplication of micrococci or parasitic vegetable bodies in the system. There is more unanimity in the fact that the disease or these spores can be communicated from one person to another or can be carried by any vehicle or through any channel, just as the poison of smallpox can be.

*Pathology.*—Very little additional information has of late years been contributed to the pathology of this disease, the greatest efforts having been directed towards elucidating its etiology. The disease is admitted to be a constitutional affection, with the seat of its most important

symptoms in the throat. It has been demonstrated by the experiments of Professor WOOD and Dr. FORMAD (already referred to), that a severe inflammation of the trachea would produce a false membrane identical with that produced in diphtheria, with the only difference that micrococci were not so abundant in it. Therefore, they argued that there was nothing specific in the simple production of false membrane. From which we are led to conclude, that while this disease exhibits its recognizable and distinctive phenomena in the throat, yet the morbid changes which render it so dangerous an affection are produced in the blood, and are not yet clearly understood. In support of this view, we might quote the result of some experiments made by Dr. FORMAD, at Ludington, Michigan, during the prevalence of an epidemic of diphtheria there. Some animals were inoculated with the exudation from human beings. They sickened and died in a few days. The blood, examined during life and after death, contained micrococci, similar to those found in the blood of the diphtheritic children of Ludington. It was shown, in the course of these experiments, that the micrococci first attack the white blood corpuscles, which alter their appearance and lose their granulations. They finally become full of micrococci, and ultimately the corpuscle bursts, when its contents escape as an irregular, transparent mass, full of micrococci, to form the so-called zoëglæ masses. The bone marrow was found full of leucocytes and cells containing micrococci. This same condition, as well as similar symptoms, were observed in the cases of diphtheria in children, which determined the identity of the natural and artificially produced diseased conditions. These results tend to prove the fact that diphtheria is a constitutional disease, and the profound demoralization of the blood which exists will readily explain the serious nature of the disease.

This altered and degenerated condition of the vital fluid will likewise make clear the cause of the serious after-effects so often found in this disease. To epitomize: while the ordinary diagnostic pathological phenomena of diphtheria are seated in the throat, the significant and dangerous morbid changes take place in the blood, and consist of degeneration of the white corpuscles (and most likely other and more important elements), induced by the presence of parasitic vegetable growths.

*Diagnosis.*—As may be anticipated from what has been said of the pathology of this disease, the most certain diagnostic points are to be found in an examination of the blood. Dr. FORMAD'S

experiments at Ludington resulted in the finding of micrococci in the blood of *every* case of diphtheria. In some they were free; in others they were found in the white blood corpuscles; while in a third class they were found in zoöglea masses; but, in some form or other, they were found in *every* case, and he must have examined a large number, since he tells us that "almost all the children had it," and Ludington has a population of over two thousand. Therefore, in the light of our present knowledge, it would seem safe to say that the crucial diagnostic point of diphtheria is to be found in the presence of micrococci in the blood. Taken in connection with the ordinary signs of the disease, the microscopic revelation of these parasites would render the diagnosis as certain as our present knowledge seems capable of making it. The ordinary symptoms of diphtheria, with which all are familiar, viz., sore throat, fever, and exudation, might occur from a simple, non-specific pharyngitis; but if, in connection with these familiar symptoms, we have great prostration, and a microscopic examination of the blood reveals the presence of micrococci, then can a positive diagnosis of diphtheria be made, with as much certainty as our existing medical knowledge warrants. This point is an additional argument of the necessity for every physician to possess a microscope and learn how to use it. This microscopic element of diagnosis is a very important one, and bears directly on the treatment. Because, if we possess a *certain* means of recognizing this disease in its *early stages*, we are much assisted in our treatment. Therefore, it behooves every physician who may be called to treat a case of suspected diphtheria, to at once make a microscopic examination of the blood and to record his experience, since by it we may be able to recognize and combat in its incipency this fatal disease. The detection of the presence of micrococci in the blood is the only recent contribution to the diagnosis of diphtheria, and if found, by more extended experience, to be universal, it constitutes all that we require, since it will, if always present, furnish us undisputed and undoubted evidence of the nature of the disease.

*Treatment.*—This is, indeed, a wide, and almost an illimitable field; as in the case of every other disease about which our knowledge is uncertain, nearly every remedy in the Dispensatory has been at times vaunted as useful in diphtheria. The time, no doubt, will come when we will possess a specific antidote capable of destroying the vitality of this diphtheritic parasite, and in this direction there is ample room for research

and fame. But with our present knowledge, the treatment of this disease must be mainly the treatment of symptoms. Since it is essentially an asthenic disease, since it proves dangerous mainly by exhausting the strength, we must early resort to supportive treatment. No recent developments of *any* note have been made as to the treatment of this disease. Among those that have appeared we may mention mercurial fumigations as recommended and practiced by Dr. J. CORBIN (see *Half-yearly Compendium Med. Science*, January, 1882, D. G. Brinton, M.D.); pilocarpine muriate recommended by Dr. H. F. WILLIAMSON (see *the same*), and the use of electricity by Dr. G. K. SMITH (*same*). While these various remedial agents may and probably do have *some influence* on this disease, yet our therapeutic beacon leads us to look for some agent possessing the power of destroying the vitality of the parasitic growth which causes the disease, and until such a discovery has been made, we can only *temporize* with the ravages of the poison, support the patient's strength and treat symptoms as we find them. The *Compendium* (already referred to) contains a quotation from the *Bull. de Therapeutique* on the local use of *papaine*, the extract of the *carica papaya*, in diphtheria. It is deserving of notice and commands further investigation. In relation to it, Dr. BOUCHUT stated to the French Academy of Medicine "that a piece of diphtheritic membrane, thick, elastic and resistant, if placed in a 33 per cent. solution of *papaine*, will be dissolved in a few hours in the cold; heat effects solution in a few minutes. If a piece of moist fibrin be touched for an instant with the solution, it retains the power of dissolving and forming peptone, even though afterwards washed in a stream of water for several hours. These experiments suggested the topical use of *papaine* in diphtheria. It was found, however, that solution takes place much more slowly when the membranes are still attached to the living tissues, than when in a test tube; nevertheless, the treatment has been tolerably successful and is worthy of a further trial. Dr. BOUCHUT applied it in thirty-two cases, in children and adults, with four deaths" (a very gratifying result). "The fluid must be applied every two hours." When successful "it gradually softens and disintegrates the exudation and causes it to disappear in from three to five days." This experience of *papaine*, with the proportion of cases apparently in its favor, from a reliable authority, would entitle it to consideration, and further research into its curative or diphtheritic preventive power should be encouraged. To

*summarize*: We possess no specific for diphtheria. Our treatment must be that of symptoms as they arise, combined with a general tonic plan. We can only hope to successfully combat this fatal disease when we have discovered a remedy capable of neutralizing or destroying the vitality and activity of the poison producing it.

*Abortive Treatment.*—In conclusion, an interesting point has been raised by an English physician, as to whether a threatened attack of diphtheria can be aborted. He had experience with two cases who, after exposure to diphtheritic contagion by nursing fatal cases of the disease, were taken sick, with symptoms resembling those of diphtheria. The patients were seen very early in the attack and were put to bed, under an anti-febrile course of treatment, with tonics and local applications, or astringent gargles to the throat. No special line of treatment was observed, quinine, iron, chlorate of potash, and alcohol, being the chief means employed, and in each case what threatened to be an attack of diphtheria resulted in complete recovery in a few days. Of course, these two cases are insignificant in establishing a law that this disease can be aborted, but straws tell which way the wind blows, and if further observation proves that we can, by appropriate measures, prevent an attack of diphtheria, this observation of our British brother will assume due significance. He is careful to note the fact that if this disease can be aborted, it can only be accomplished by seeing the patient very early in the disease, before it has become developed to any extent.

In continuation of this report on Infectious Diseases, we will next week discuss the most recent developments concerning *Scarlet Fever*.

(To be Continued.)

## CORRESPONDENCE.

### Reducing Fractures without Pain and without Anæsthetics.

ED. MED. AND SURG. REPORTER:—

Many years ago, R. W., a boy of fourteen years of age, fell and experienced a fractured arm. It proved a Colles fracture. Splints were applied and held in place by ties of strong tape. In four weeks, to all appearance, the limb was restored to symmetry and health. The dressings were removed and the arm and hand were slowly brought into every day use.

A week later my attention was called to it. To my mortification, there stared at me all the original deformity seen at the moment of the accident. What had happened? Nothing! The lad used it as he found occasion, and with no

particular occupation. Gradually, the bony displacement had returned, in mockery of surgical therapeutics. The injury was now five weeks old. What was to be done?

We have all heard of broken limbs in malposition being purposely broken over again. Such a course seemed irrational, indefensible, and therefore, unsurgical.

The splints were re-applied. This time, to the outside board from a cigar box was nailed an infra piece at right angles with the side piece; this basic splint was as wide as the thickness of the arm, to sustain the weight of the forearm and hand, and afford barely sufficient border to support the lower edge of the inside splint. The whole was tied firmly with two tapes, and supported in a sling. It was dressed and tightened up every one or two days.

The weight of the hand and the gradual painless pressure of the splints slowly corrected the ugly abnormal features, and in two weeks it was a satisfaction to witness all deformity had gone, and the member restored to natural shape. The mistake was in removing the splints prematurely.

Aside from recovering lost ground without harm, this case furnished important instruction, and outlined a new and better rule of practice. It taught how to dress fractures without inflicting pain, and without the use of anæsthetics. It taught how to dispense with what the writer now regards as the absurd proceeding of *pulling the injured part, to "set the bones."* That old first step is agonizing and needless. If splint pressure and position of limb will painlessly reduce fracture and deformity after five weeks' existence, why not employ them for that object in the outset, and avoid the flourish of setting garnished with screams? The simplest and easiest is the best. Therefore, for more than a decade, every case of fractured arm in my hands has been dressed in the manner above described, without pulling, without pain, without chloroform or ether, and without resulting deformity. With daily dressing, in a few days or a week apposition of the fragments is gradually and insensibly effected. As the swelling subsides the natural contour of the member is brought about, all in ample time. As a general rule, bandages to fractured limbs should be condemned and avoided. But the subject of absurd bandaging is sufficient for another article.

Stockton, Cal.

A. S. HUDSON, M.D.

### Malformation of the Urethra.

ED. MED. AND SURG. REPORTER:—

Authors on surgery state that malformations of the urethra in male children are exceedingly rare. I, therefore, take the present opportunity of reporting a case in which there was occlusion of the external meatus urinarius, absence of the frænum, and paraphimosis, in a male child, when it was born.

Mrs. Edward O., aged thirty eight, gave birth to her eighth child, a male, in which the above named malformation existed, at eight o'clock, A.M., of January 16th, 1882. Dr. J. P. Treacy, was her accoucheur. I saw the child, with Dr.

Treacy on January 17th. The child had not passed any urine since its birth, about thirty hours intervening. The child was fat, healthy, and otherwise well developed. All of Mrs. O's, other children are healthy and well developed. In order to remedy the occlusion of the meatus, I made a vertical incision with a bistoury, about one-eighth of an inch deep, and along the depression which was present over the meatus, and directed the nurse to use a small napkin separately over the penis, so as to be certain the child urinated *per via naturalis*. The next day, when I saw the child, with Dr. Treacy, we found it had urinated twice *per via naturalis*. The child has had no further difficulty in urinating. The swelling of the prepuce, which was present at birth, has now subsided, but paraphimosis still exists, and I think will continue to exist, as the prepuce is very short and covers the upper two-thirds of the base of the glans penis, like a hood. To-day, in my presence, while the napkin was off, urinated naturally.

JOHN M. BATTEN, M.D.  
73 Sixth Avenue, Pittsburgh, Pa.

#### A Case of Congenital Gastro-Diaphragmatic Hernia.

ED. MED. AND SURG. REPORTER:—

This somewhat remarkable case occurred twenty-two years ago. It has been withheld, on account of the very imperfect observations which I was enabled to obtain.

I was called at 4 o'clock in the afternoon of the 15th of the third month, 1860, to see Elizabeth, a four year old daughter of Andrew Graham, living at New Garden. She had been, up to this date, a sprightly and healthy child; never having been seriously sick, or suspected of anything wrong in her organism.

She ate her dinner as usual, but soon began to complain of pain lung in the stomach, and retching to vomit. I found her suffering severely from the pain, which she referred to the epigastrium, and the retchings were incessant. There was nothing raised from the stomach, and whatever she made an attempt to swallow was instantly rejected; and this continued to be the case until her death. She inclined to the position on her knees and elbows. Owing to a timid and fretful disposition, increased by an aged and indulgent grandmother, she would not allow me to approach her.

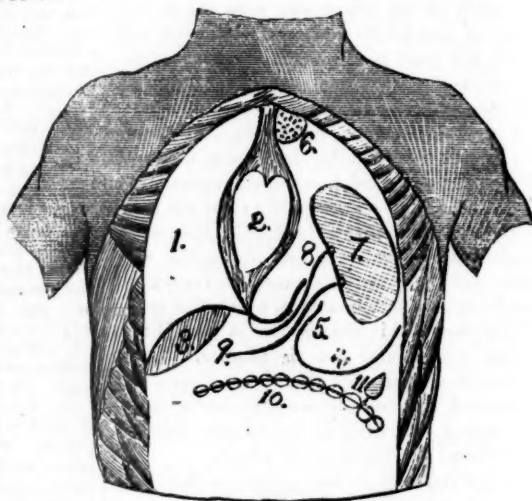
My early diagnosis was, stray worms in the stomach, which the result will probably justify. A few hasty and imperfect observations only could be made during life. Pulse very frequent and feeble; respiration hurried and laborious, with a marked elevation of the right shoulder; thorax was resonant on both sides; no tendency to cough.

As it was found impossible to give medicine by the mouth, recourse was had to enemata and ex-

ternal appliances for relief. The pain was, in a measure, amenable to the use of anodynes, but the retching never, till death relieved her, on the third day.

An imperfect and hurried post-mortem was obtained, under strict surveillance, just before burial. My notes are, consequently, as imperfect as my observations during life.

Nothing remarkable was observed in the cadaver, except a fullness in the left pleural and hypochondriac regions. When the abdominal viscera were brought into view it was apparent that there was a displacement or a negation of some of the organs. The liver was in situ; the stomach was nowhere to be seen; the left diaphragm was pressed down, presenting a strong convexity below, and depressing the transverse colon, to which the spleen was attached by loose tissue. On a



1. Right lung. 2. Heart, pushed to the right. 3. Liver. 4. Left diaphragm distended. 5. Infected tube, laid open. 6. Root of left lung. 7. Stomach (reduced to show the tube of the diaphragm). 8. Esophagus. 9. Duodenum. 10. Transverse colon. 11. Spleen.

closer inspection, there was found a circular perforation of the distended diaphragm, of an inch and a half diameter, with its edge rolled up into the thorax. Both the esophagus and the duodenum were traced into or through this aperture into the pleural cavity.

The thorax was then opened, when the character of the case became more apparent. The left lung was entirely wanting or only represented by a dark-colored button the size of half a walnut, at its root, in the apex of the cavity. The pleural cavity was wholly occupied by the distended stomach, with its cardiac extremity upward, and the large curvature resting against the costal pleura. It was now seen that the involution margin of the aperture in the diaphragm was carried up in the form of a delicate tube, inclosing the esophagus and duodenum, for more than two inches. The stomach was greatly distended with gas, pressing the diaphragm downward, and pushing the heart over toward the

right side. In addition to the gas, the stomach contained a few ounces of mucus, and broken down food, and eight large, living, lumbricoid worms, thus verifying the diagnosis. There was no effusion of serum, or of coagulable lymph, or morbid adhesions to be found in any part of the body, to indicate inflammation, either past or present.

It is difficult to draw satisfactory conclusions from this very imperfect, though faithful narrative. Certainly nothing in the previous history of the child, or in the pathological phenomena observed during her illness, would have led any one to anticipate the existing state of things, as revealed by the autopsy, nor would it have availed anything to have known it. It must, I think, be obvious that this displacement was congenital. The abnormal condition could not, by any possibility, have occurred within the last three days; and there was no post-natal record to which it could be referred. Whether should we refer it to an original defect in the primordial germ? or may it have been caused by some severe pre-natal concussion, or compression, of the early and nascent embryo?

Every physician is aware of the extreme irritation which is produced in the stomach by the sudden irruption of a few worms into it. It is not so easy to comprehend how so many large worms should have thus suddenly found a passage through the deflected duodenum. Yet, while in health, the passage must have been quite pervious. They may have become entangled in a ball, or knot, as they sometimes do, and in that condition entered the stomach. We only have the fact of their presence. The gas in the stomach may have originated, more or less, from post-mortem changes.

E. MICHENER, M.D.

*Sylvania, Chester Co., Pa.*

## NEWS AND MISCELLANY.

### The Horrors of Smallpox.

A secular paper gives a graphic description of the horrors of this terrible disease. Recently, in Jersey city, a shoemaker died of the disease, and when the health inspector visited the house, he found the following horrible sight. The wife was lying on the floor on a bundle of rags, suffering with the disease, while on either side of her lay a child, dead from smallpox. In the corner of the room a third child was ill with it, while the remaining two were cuddled up to a small stove, but had not yet been attacked.

### Medical Ethics in France.

The Société Médicale de Nièvre have recently drawn up a little code, which our American brethren would do well to imitate. It runs as follows: 1st. Medical men honor their profession by honoring themselves in their confraternal relations, and, consequently, by observing, in their mutual intercourse, the greatest courtesy in actions and in words. 2d. Every medical man called in accidentally to a patient who is under treatment, in the absence of the usual medical man, should restrict himself to prescribing the

medicines necessary for the moment, and not make any remarks upon the treatment which has been followed. 3d. He should not call again upon the patient, unless he be called in consultation by the medical man in attendance. 4th. Medical men called in consultation should abstain, while in the presence of the patient and of his friends, from any expressions that may prejudice the usual medical attendant. In private consultations, that is to say, between the medical men only, any expressions which may throw discredit on either of the consultants is reprehensible. The treatment agreed upon by the consultants should be carried out by the usual medical man. 5th. The consulting medical man should not go to see the patient, unless he be again called in, or authorized to do so by the medical man in charge.

### Smallpox in Philadelphia.

According to the Health officer's statement, smallpox is rapidly getting under control in this city. Strange to say, and contrary to precedent, the disease has diminished since the advent of the cold spell. As high as twenty new cases have been reported in one day, and from seventeen to nineteen have been the rule for some time past. But on the twenty-third instant, only thirteen were reported, and there has been a rapid decline, so marked that on the twenty-fifth not a single new case was reported.

### A Good Way to Increase Smallpox.

One day, recently, seven tramps, broken out and covered with smallpox, who had come from other cities, boldly walked into the Health Office in Chicago. On the same day, a man who had just arrived from New York, whither he had come from Germany, walked into the same office, with a very bad attack of the disease. Such carelessness seems like tempting nature, and must ever be rewarded by a plentiful crop of disease. There is only one way of preventing such criminal negligence, namely, by strict legislation, rigidly enforced.

### Insanity a Cause for Divorce.

A recent decision in an English divorce court is of interest in this connection. The first cause for the husband to suspect his wife's sanity occurred on the nuptial night, when she refused to allow the marriage to be consummated. He sent her home. Subsequently she was examined by several physicians, who agreed that she was afflicted with melancholia, and was not in fit condition, mentally, to enter into a marriage contract. The court held the same view, and declared the marriage null.

### Anti-Vaccinationists.

The London *Lancet* says, "The Anti-Vaccinationists at Dewsbury, recently organized a demonstration against the vaccination officer. Two brass bands, torch bearers, sensational pictures, and an effigy of the obnoxious official, had part in the demonstration. He was one of the most amused of the spectators."

## Personal.

—M. Charles Richet has lately made a communication to the Paris Société de Biologie, in which he seeks to show that after the death of an animal the nerves of sensation retain their functions longer than the nerves of motion.

—The Wyatt-Edgell prize, offered in England, of £200, for the best essay on the "Range of Heredity in Health and Disease," has been awarded to Mr. George Gaskoin.

—Dr. John H. Ross, a leading physician of Kokomo, Ind., recently caned the editor of a secular paper, on account of an article published by him.

—Dr. J. S. Billings and Dr. H. J. Bigelow have been elected honorary members of the London Clinical Society.

## Items.

—Messrs. Dickinson, of Broad street, London, are painting a large group picture of the garden party given by Baroness Burdett Coutts to the International Medical Congress, in August last. The picture will contain about one hundred of the leading visitors and presidents of sections. When completed, no doubt it will be engraved. Such an engraving would make a handsome ornament for the wall of a doctor's office.

—A young woman, who had a peculiar affection of the face, for which she persistently refused to allow surgical interference, died recently, in Virginia. Her grave was robbed, but for what purpose is not stated, although the circumstances of the case would seem to implicate the physicians of the neighborhood.

—A midwife in England was committed recently for trial for manslaughter. She had, it was alleged, conveyed puerperal fever from one patient to another, and death resulted in the second case.

—The Rochester *Express* tells about a very deaf man, who, being admonished on a very cold day, that if he did not protect his ears they would freeze, replied, "Suppose they do, they're no good."

## OBITUARY NOTICES.

## DR. BRIERRE DE BOISMONT.

We have just heard of the death of this eminent alienist, in his eighty-fifth year, at St. Mandé, where he had for some years lived in retirement. He was one of the founders of the Medico-Psychological Society of Paris, of which he was also one of the most zealous and eminent members. His contributions to the literature of insanity were very numerous and authoritative.

## DR. F. MEYER.

Dr. F. Meyer, a leading physician of Bucyrus, Ohio, died recently, having suffered from nervous disorders for six years. He was a native of Germany, occupying the rank of a Count during the revolution of 1849. He espoused the Liberal cause, and with many others was forced

to leave the country. He came to America and settled in Bucyrus, and for many years had an extensive practice as a physician.

## DR. MAURICE BEESLEY.

Dr. Maurice Beesley died at his residence in Dennisville, N. J., recently, in the seventy-seventh year of his age. His death was caused by general debility. He was born at Beesley's Point. He was the representative of Cape May County in the New Jersey Legislature for four years, and was, until last summer, when he resigned on account of failing health, Superintendent of Schools for Cape May County, which office he held from its creation. He was one of the oldest graduates of the University of Pennsylvania, and has been practicing medicine in Cape May county for the past fifty-five years. He was the author of several works on geological surveys, and was considered an authority on the boundary lines of the sunken forests and cedar swamps in that county.

## QUERIES AND REPLIES.

*Dr. M. H. S., of Pa., asks us whether the Philadelphia County Medical Society will admit female physicians. Also, whether they have removed the restriction from allowing their members to consult with professors in the Woman's Medical College.*

*Answer.*—1st. The Society have decided to admit to membership all qualified female practitioners that may apply. 2d. Such a restriction never existed. The President of the Society is a Professor in the Woman's College.

*A subscriber asks for a working formula for using gelatine as a suppository.*

*Answer.*—R. Gelatin, 1 part  
Glycerine, 1 part  
Water, 2 parts. M.

## MARRIAGES.

**CURRIER-CONVERSE.**—In Newport, Vt., Dec. 29th, by Rev. J. W. Adams, D. M. Currier, M.D., and Annie M. Converse, both of Newport.

**PIERCE-HEATH.**—By Rev. Joseph E. Andrews, assisted by Rev. J. C. Hunter, at the residence of the bride's aunt, Miss M. J. Parkinson, West Elizabeth, Pa., Tuesday evening, January 3d, 1882, A. M. Pierce, M.D., of Gill Hall, Allegheny Co., Pa., and Miss Mary E. Heath, of West Elizabeth, Allegheny Co., Pa.

**PYKE-LEAMING.**—In Romney, Ind., December 29th, 1881, by Rev. John A. Campbell, Albert D. Pyke, M.D., and Elizabeth M., daughter of Dr. Furman Leaming.

**STARKEY-PITCAIRN.**—At Shadyside, Pittsburg, Pa., on December 22d, 1881, G. R. Starkey, M.D., of Philadelphia, and Miss Margaret Pitcairn, of Pittsburg, by Rev. W. H. Benade.

**WETHERILL-STRECKER.**—On January 6th, by Rev. D. L. Patterson, at his residence, Henry M. Wetherill, Jr., M.D., and Florence Strecker, both of Philadelphia.

## DEATHS.

**BEESLEY.**—On the 13th inst., Dr. Maurice Beesley, at Dennisville, N. J., aged 77 years.

**GEORGE.**—January 1st, 1882, Harry Leslie, son of Dr. M. R. and Jennie H. George, of South Bend, Armstrong county, Pa., aged 6 months and 13 days.

**PARMLY.**—In New York, on Sunday, January 16th, Dr. Jahiel Parmly, aged 74 years.

**WILSON.**—At Jacksonville, Florida, on the 16th inst., J. Theodore Wilson, M.D., aged 27 years.